

# M MACHINEX

*Experience Results*

## RECYCLING EQUIPMENT & SORTING TECHNOLOGIES



### **Innovative, ultra-efficient, safe and low maintenance recycling equipment**

Machinex equipment is renowned for adding productivity and profitability to sorting facilities. A host of innovative solutions and equipment are available, all of which are installed by a trained and experienced Machinex team for maximum results with minimum disruption.

# SUPERIOR CONVEYOR DESIGNS

For decades, our engineering staff has used its in-depth knowledge of the industry to continuously improve our conveyors.

We understand each customer's needs and design our conveyors with the features that are the most important to them. Machinex conveyors provide versatile material handling solutions for every project. The result is a host of safety and maintenance features to ensure maximum performance.

**Several models are available based on application.**



## SLIDER BED CONVEYORS

- Sorting application
- Ergonomic design allowing sorters to easily handle material
- Fully enclosed sub-frame to improve employee protection
- Optional container return device



## TRANSFER CONVEYORS

- Transfer application
- Wide range of belts, pulleys, and support frame configurations based on application
- Thoughtful adjustability and maintenance access



## PICKING IDLER CONVEYORS

- 30° side idlers to increase holding capacity
  - Recommended for carrying fines and abrasive particles, such as glass
- Box belt configuration available
  - Recommended for glass, aggregate, bulk, and heavy items



## CHAIN ROLLER CONVEYORS

Chain and wheel assembly supported on steel rail-type tracks.

- Choice of belts : Combo belt, Z-shaped or Apron pan
- Multiple chain pitches available
- Typical use : system and baler feed



## CHAIN BELT CONVEYORS

- Compact and sealed frame
- Combo belt on replaceable impact shoes
- Recommended use : bunker conveyor, low tonnage baler & system feed, paper shredding, printer waste



## DRAG CHAIN CONVEYORS

- Leakproof, fully enclosed design
- Bolted paddles for easy replacement
- Typical use : RDF, SRF, organics, other pre-sized materials



## SCREW CONVEYORS

- Construction type : standard steel, anti-abrasive steel, or stainless steel
- Multiple chain pitches available
- Typical use : leveling or conveying, various kinds of pre-sized materials

### STANDARD FEATURES

- Modular construction available in several configurations
- Custom engineered side panels/skirting
- Take-up system
- OSHA compliant

### OPTIONS

#### GENERAL

- Various belting : width, thickness, cleats
- Electric variable speed drive
- Reversible

#### CHAIN CONVEYOR

- Automatic chain lubrication
- Mechanical backstop

#### BELT CONVEYOR

- Pulley size range starting at 4"
- Self-tensioning belt scraper
- Solid bottom plate or carrying idlers
- Belt weight scale
- Self-cleaning tail pulley

# SCREENING SEPARATORS



## MACH OCC

The MACH OCC Screens are renowned for being reliable and unsurpassed in the industry, with a throughput of up to 50 tons per hour. Machinex presents an improved version that requires less maintenance and increases the cardboard recovery rate, thus answering the market's evolving needs.

- Separates cardboard from the material stream at the beginning of the system
- Larger square-shaped shafts greatly diminish wrapping
- Increase OCC/OBB recovery between 15% to 30%



## MACH BALLISTIC

Equipped with paddles, this separator is designed to separate flexible items from rigid items. Fine particles can be collected separately with the optional variable screen openings. It can replace typical Rubber Disc Screens in various applications.

- Non-wrapping design minimizes the cleaning & maintenance costs
- Constant performance with all steel screening surface
- Versatility: ensures that different material types can be processed within a single system



## MACH TROMMELS

A rotating drum that separates the material flow to the desired fraction size. Effective inside diameter and screen plate opening size will vary depending on the customer's needs and applications.

- Versatility: enables processing of different material streams within a single system
- Provides excellent preparation for downstream sorting
- Trommel 3D/HD available for Construction & Demolition



## SCALPING & FINES SCREENS

These impressively versatile separators have many applications available in different models, such as regular fine screens, scalping screens and glass breaker screens. They remove glass and fines particles early in the system to prevent the material from becoming contaminated and protect equipment from glass abrasion.



## MACH ONE NEWS & FINISHING SCREENS

**MACH One News:** Rubber discs screen separate large fiber from the material stream while removing a maximum amount of newsprint from the material stream. These separators are available with single, double, or even triple screening decks depending on the application.

**MACH One Finishing:** Rubber discs screens separate the material into three streams: remaining fine particles, containers and mixed paper.

# HIGH TECHNOLOGY EQUIPMENT



## MACH HYSPEC® OPTICAL SORTERS

A key equipment in today's MRF, the Machinex Optical Sorting machine offers unique, hyperspectral recognition technology, and color recognition, thereby enabling separation of recyclable materials into different categories.

- Increased product recognition through hyperspectral technology
- Outstanding accuracy & capacity with fast detection analysis
- Static acquisition system (no moving parts) with superior reliability & stability
- New ergonomic design with ease of access for maintenance



## SAMURAI® SORTING ROBOTS

An adaptive sorting robot that employs superior artificial intelligence technology to identify materials for an accurate, positive product recovery or a precise quality control function.

- Reduced labor, managing costs & HR challenges
- Continuous performance optimization of the AI material recognition software
- Up to 95% efficiency of targeted product recognition



## MACH VISION

New high-technology equipment that analyzes the material stream composition in real-time.

- Powered by AI, it can also use a combination of field proven technologies depending on application (NIR, hyperspectral, and metal detector)
- Help improve operations and profitability
- Connected to Vision Intell, a platform that delivers real-time information and reports



## INTELL PLATFORM

Intell is a platform connected to high-tech Machinex equipment such as MACH Vision, Samurai® Robot, and MACH Hyspec® Optical Sorter. The Intell dashboard provides a real-time data capture to fully comprehend the material stream and allow a data driven decision process for the MRF operator to optimize performances.

# ADDITIONAL EQUIPMENT



## LEVELING DEVICES

Machinex offers two leveling devices, depending on customer needs to ensure a constant supply to the recycling line.

**Drum Feeder:** Ensures a constant supply to the recycling line and streamlines toward the sorter and system operation by allowing retention time to the input material.

**Back Scraping Drum:** Ensures a constant height of material input that optimizes sorting operations and overall system performance.



## BAG OPENER

Essential equipment to process material that is totally or partially bagged. Located at the front end of the system, the bag opener shears the bags and liberates the material. In proper applications, it can be integrated in-line or fed with diverted bag material only.



## PLASTIC PERFORATOR

The dual drums equipped with teeth, flatten and perforate containers.

- Gives better storage capacity and better compaction rate in the baler
- Increases the efficiency of optical sorting by reducing movement of the containers on the acceleration conveyor
- One drum mounted on a heavy duty gas spring to accommodate bulky objects up to 5 gallons



## MAGNETS – FERROUS METAL SEPARATORS

Machinex can integrate a wide range of magnetic separators from different brands to sort ferrous metals in a way that suits the customer's needs and budget.



## EDDY CURRENT SEPARATORS

Machinex Eddy Current separators ensure an optimal recovery of non-ferrous metals, such as aluminum from the material stream.



## PLASTIC FILM CAPTURE

Machinex offers solutions to capture and remove plastic film from the stream. A full range of solutions is available depending on the application.

- Film Grabber
- Discharged Rotary Valve
- Film Capture on Optical Sorter
- Film Screw Compactors



## GLASS CLEANUP SYSTEMS

Machinex offers tailor-made solutions designed for each client. The trommel-cyclone combo is designed to clean the fines' stream and obtain marketable, mixed broken glass.

- Three steps screening improves efficiency
- Vacuum separation box to extract light fraction
- Rotary air valve to remove light fraction without losing pressure



## HEAVY-LIGHT SEPARATORS

Machinex provides different models depending on the application.

- Mach Vortex (Single Drum Heavy-Light Separator) : Separates material based on density and shape applicable to various streams
- Air Classifier
- Cyclone
- Air Knife



## MACH MOTION FLOOR®

This mobile floor is used as an infeed for different types of systems or to automate material storage bunkers.

- Designed to operate on a long term basis with very low maintenance
- Steel slats are shaped to prevent intrusion of scrap under the sliding surface
- Adjustable speed, via a proportional hydraulic valve, to 15 feet per minute



## COMPACTORS

These machines are used for the compaction of solid waste and recyclables. Machinex provides an extensive range of compactors, from 3 yd<sup>3</sup> to 14 yd<sup>3</sup> capacity and they can fill closed roll-off containers or semi-trailers. Ideal for reject compaction in MRFs and transfer stations.



## BALERS

Machinex manufactures high capacity, Single-Ram, and II-Ram horizontal balers to specifically help streamline operations. Other solutions include a closed door baler with full eject.

# AUTOMATION & CONTROL

Machinex Control and Supervisory systems provide flexible control for the maintenance and operating crew, as well as powerful management tools for the plant supervisor.



## HMI ON CONTROL PANELS

A touch screen control panel solution offers a simple way to control the sorting lines, adjust each piece of equipment individually, and visualize the faults and event occurrences.

- User-friendly touchscreen interface
- Can interface with existing system and equipment



## HANDHELD DEVICE

Machinex offers a sturdy handheld device specially designed for its own systems that interface with PLC systems or any other platform. This tablet is used to:

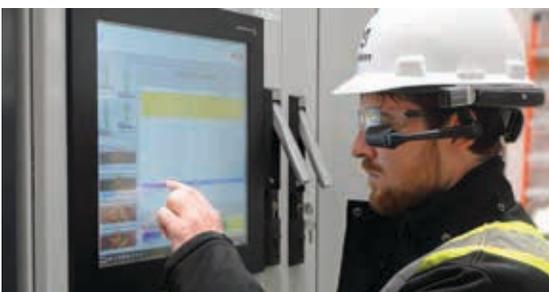
- Manage separators parameters and conveyors speed
- Control the mode & state of each line, along with the whole system
- Manually start and stop each piece of equipment
- Manage each piece of equipment's specific adjustment



## SUPERVISION SOLUTIONS

Machinex offers management solutions to create the reports that will allow MRF operators to better know their system's efficiency.

- **Basic Line Report**: Supply usefull information about recycling lines
- **Reporting Software**: Produce reports with required information summarized in a simplified document
- **SCADA System**: Complete solution to generate advanced reports and alarms



## AUGMENTED REALITY REMOTE SERVICE

Machinex offers now augmented reality technology to provide quick, easy and contactless remote for repair or maintenance on equipment.