







#### WORLD AUTHORITY IN SEPARATION TECHNOLOGIES



Many of Eriez products use magnetic technology.



Eriez' 2007 purchase of Canadian Process Technologies (CPT) established the Eriez Flotation Division as a market leader for both fine and coarse flotation.



Eddy Current Separator sorts aluminum cans in a recycling facility.

A simple permanent magnet installed in a grain mill in 1942 by founder O.F. Merwin began the Eriez legacy. Today, through the Merwin family's stewardship, the company has grown through continuous product innovation and worldwide expansion with nearly a million square feet of manufacturing space on six continents and more than 800 employees.

Eriez is the market leader in separation, inspection and material handling equipment used in process industries like food, plastics and chemical as well as in mining, aggregates, metalworking and recycling. The majority of the company's products have historically been based on the application of magnetic technology.

These include magnetic separators to remove dangerous tramp metals or fine metallic contaminants, magnetic concentrators, electromagnetic vibratory feeders, magnetic conveyors, lifting magnets and more. Investments in mineral flotation, metal detection and fluid recycling technologies have extended Eriez' leadership position in its key markets.

A look to the future sees strong global demand for raw materials like steel and aluminum, precious metals, food, pharmaceuticals and chemicals. Eriez' wide range of equipment and solutions align well with future demand in these global markets.

# sebaration

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#### metal separation

Magnetic separators are used in virtually all process industries, from removing fine metal contaminants in food processing to capturing damaging tramp metals in large mining operations.

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#### mineral processing

Eriez offers a variety of solutions for the beneficiation of industrial minerals to produce high purity products. Eriez Flotation Division designs flotation systems for cleaning, roughing and scavenging applications in metallic and non-metallic processing operations.

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#### fluid recycling

Eriez' fluid recycling equipment efficiently removes solids and tramp oils from metalworking coolants in machine tool sumps.

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#### metal detection

Our metal detection equipment provides critical safety measures to ensure metal is not contaminating products or damaging process equipment.

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#### feeders, screeners & conveyors

Light to heavy-duty feeders and conveyors accurately feed and control material flows ranging from spoonfuls to 1,800 tons per hour. Vibratory screeners classify or separate a wide variety of materials.

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#### lift magnets

Permanent magnets easily lift and move steel castings, parts, sheets and plates without the need for slings, hooks or cables.

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# separation METAL SEPARATION



▲ Grain mill uses Xtreme Rare Earth grate magnets to remove metal contaminants.

▼ Suspended electromagnet removes tramp metal at an aggregate plant.

Eriez' origins can be traced back to a single plate magnet installed to remove tramp metals from the flow of grain, thus removing the danger of sparks in the highly flammable environment.

Through continuous innovation, the company now offers a wide range of separation technologies designed to remove, sort, classify or concentrate materials, thereby improving product quality and often its safety. These solutions range from removing micron-sized, weakly magnetic contaminants in food to concentrating tons of iron ore in mines.



#### METAL SEPARATORS IN ACTION

Magnetic equipment is commonly used to remove dangerous unwanted metal contaminants from product flows. This equipment is also widely used in Resource Recovery applications to sort and reclaim valuable metals.



**Small Magnetic Separators** effectively remove tramp iron in both liquid and dry processing applications.



**Magnetic Traps** remove metal contaminants from titanium dioxide production at a chemical plant in Ohio. Traps are available in a wide selection of sizes and configurations.



**Grate Magnets** used in food preparation at Better Baked Foods. Grate Magnets provide powerful, permanent protection against fine and tramp iron contamination.



**Plate Magnets** 

produce a powerful, deep magnet field to attract and hold ferrous contaminants within heavy material flows. Eriez offers the widest range of models for virtually any product free-flowing application.



Magnetic Rota-Grate®

removes metal contaminants from dry process flows. The slowly rotating tube circuit catches unwanted tramp iron and prevents bridging of powdery material like flour.



**Suspended Electromagnets** 

safely and automatically remove tramp iron from heavy product flows such as wood, coal or aggregate being conveyed on belts, vibratory feeders or in chutes.



FinesSort®

recovers small ferrous from waste at a scrap yard in Tennessee. Powerful Rare Earth Magnets recover virtually all ferrous metal from crushed automobiles and other scrap.



**Eddy Current Separators** 

utilize Rare Earth magnets arranged into high speed, composite-shelled rotor to deliver exceptional nonferrous metal separation from PET flake and bottles.



CleanStream Process

recovers 99% of the ferrous and concentrates it to less than .2% copper in auto shredding facilities.



Sorters

recover nonferrous metal at a scrap yard in Mexico.



**Magnetic Pulleys** 

are used by auto shredders to separate ferrous metals on scavenger belt.



**Magnetic Roll** 

separates co-molded plastic regrind containing PolyMag™ metallic additive.

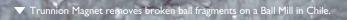
# separation MINERAL PROCESSING



Eriez offers a variety of solutions for the beneficiation of industrial minerals to produce high purity products. Various types of low, medium and high intensity magnetic separators are used in batch or continuously, and in either wet (slurry-based) or dry processing applications. Eriez Flotation Division's flotation cells, spargers, mini pilot plants, slurry distributors and test equipment are used in roughing, cleaning and scavenging applications in metallic and non-metallic processing applications.

■ Ball chips are attracted to the liner and form a protective layer.







A magnet holds the liner to the drum.

#### MINERAL PROCESSING SEPARATORS



### magnetic separators



#### Low and Medium Intensity Wet Drums

continuously collect fine ferromagnetic and paramagnetic materials in ore treatment operations.



#### Column Cell **Flotation**

spargers generate bubbles in a non-turbulent environment to promote bubbleparticle adhesion for "floating" the mineral to the surface.



#### **Low Intensity DF Dry** Magnetic

high-speed drum concentrates iron ore or is used to remove magnetite from fly ash and other dry materials.



StackCells use an enclosed impeller for bubble generation making it an extremely energy efficient flotation cell.



# **Separators**

#### Rare Earth Roll **S**eparators

high intensity permanent magnets produce a magnetic field in excess of 21,000 gauss for purification or concentration of weakly magnetic materials.

#### **CrossFlow® Separators**

operate on the principle of hindered settling of solids against a rising water flow to upgrade minerals/coal based on size and specific gravity.



#### Wet High Intensity **Magnetic Filters**

continuously produce a high gradient magnetic field to remove or concentrate paramagnetic minerals in slurry form.

#### HydroFloat™ **Separators**

recover coarse particles by forming a hindered "teeter" bed of fluidized solids aided by the introduction of small air bubbles.



#### **Dry High** Intensity **Magnetic Filters**

for batch processing to purify valuable industrial minerals from all fine ferrous contaminants.

#### **Sparging** SlamJet® spargers represent the

leading edge in gas bubble generation while  $CavTube^{TM}$ spargers enhance separation by producing finer bubbles.





# separation Fluid recycling systems



Eriez coolant recycling equipment is designed to remove chips and solids as well as tramp oils from machine tool sumps. This equipment helps metalworking operations maximize coolant effectiveness and longevity, improve productivity and reduce disposal costs.

◆ Eriez SumpDoc<sup>™</sup> removes metal chips as well as completely filters fluids, removing particles down to 5 microns.



#### FLUID RECYCLING SYSTEMS

Applications include: Machining • Conventional Grinding • Creep Feed Grinding Super Abrasive Machining • Water Jet Cutting • Parts Washers



**Belt Skimmers** Removes surface oils from machine tool sumps



**Tank Side Coalescer** Allows tramp oils to naturally separate outside of turbulent sumps



**Portable Coalescer** High volume removal of free oils and fine particulates



Portable Centrifuge Removes free and emulsified tramp oils through a high speed centrifuge



**Concentration Controls**Mixing and proportioning units to simplify coolant dispensing



Rotor Bowl Centrifuge
Rotor bowl centrifuge removes sludge in grinding, honing and finishing operations



**Magnetic** 

Coolant Cleaner
Media free magnetic removal of ferrous contaminants in metalworking fluid



**Sump Cleaner** Vacuums chips from the sump and filters coolant for fast and easy sump cleaning



SumpDoc™ Inline Recycling and Filtration

Two-phase cleaning operation to remove chips, oils, and fines, then replenish sump with clean fluid



Coolant Recycling Systems
Self-contained coolant and fluid management
systems capable of recycling any water-miscible
fluid to its maximum potential.

### metal detection



▲ A 1200 Series metal detector and a suspended magnet protect downstream equipment from tramp metals.

Eriez industrial metal detectors have applications in industries including food, packaging, minerals processing, aggregates, coal, ceramic, chemical, glass, pharmaceutical, plastics and rubber. Eriez offers metal detectors suited for the specifics of your application to detect and remove ferrous and nonferrous contamination.

▼ Liquid Line Xtreme Metal Detector with remote control option.



#### METAL DETECTION

Eriez metal detectors are used in a variety of processing applications. Whether you're scanning for small ferrous, nonferrous or stainless steel contaminants or large tramp metal like digger teeth, Eriez offers the right metal detection solution.



Xtreme Metal Detector our highest sensitivity system for food, pharmaceutical and rubber industry.

I 200 Series
Metal Detector
detects large tramp
metal for the
aggregate and
mining industries.





MetAlarm
Model PL
designed specifically
for the plastic industry
for the detection of all
metals in shallow bed
depths. Easily installs on
light-duty conveyors.





Metal Detector Conveyor convenient detector conveyor unit rolls into position to protect shredders, grinders and granulators.

Double Team
Tramp Metals
combine powerful
magnetic separators
with sensitive metal
detectors for
the ultimate
in protection
from damaging
tramp metals.



Pharmaceutical Metal Detector compact system for tablet press rooms that detects and removes submillimeter metal.

Xtreme Vertical
Detectors
ideal for detection
and removal of
ferrous, nonferrous
and stainless steel
metals in gravity-fed
dry products such as
plastic flake, grains,
nuts, powders, etc.



# material handling feeders • conveyors screeners



A New York-based manufacturer of chocolates uses vibratory feeders and conveyors to process candies.

Eriez' vibratory products can be found moving tons of scrap steel in recycling yards, metering precise amounts of active ingredients in a pharmaceutical production line, conveying fragile potato chips in a packaging line or screening industrial materials in a glass factory. These applications would be served through either an electromagnetic or mechanical drive unit depending on your specific requirements.

Eriez magnetic chip and parts conveyors are virtually maintenance free and are suited to move and elevate ferrous chips, turnings, small parts and stampings.



#### FEEDERS, CONVEYORS AND SCREENERS

In addition to standard units that are available for quick shipment, Eriez offers a broad range of customized feeders, conveyors and screeners specifically designed for your unique application.



Sanitary Vibratory Feeders present products to weigh scales in packaging applications.



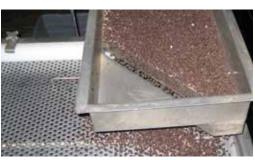




High
Deflection
Feeders
are designed
to feed difficult
materials like
powders as well
as sticky and leafy
products.



Feeders are ideal for high capacity applications in harsh environments.



Vibratory Screeners classify chocolate ingredients.

Mechanical Feeders present an even flow of material to an automated sorter at a scrap yard.





Mechanical Conveyors receive aluminum at a foundry in New York.

Magnetic Conveyors transport steel "knock-out" scrap from a forming press in Pennsylvania.

MAGNETIC CONVEYORS



Inspection Conveyor workers visually inspect carrots on sanitary vibratory conveyors.



## material handling



Eriez' SafeHold® Permanent Lift Magnets easily move semi-finished products such as machined parts, castings, press molds, steel plates, bars, tubes and more. These magnets are available in ceramic and rare earth models, lift up to 7,500 pounds with a single magnet, need no costly DC controller, and can be turned on and off with ease.

- ◀ Lift magnets easily move round bar and large steel shapes.
- ▼ Most SafeHold<sup>®</sup> Lift Magnets require no external power supply.



#### LIFT MAGNETS

Eriez' offers a complete range of permanent and electro lifting magnets for steel service centers, fabricators and other metalworking operations, as well as unique tools to fan sheet steel, move tube and pipe and guide steel on conveyors.



#### SafeHold® RPL

- Super compact footprint
- Rare Earth permanent magnets
- Five models available
- Capacity: 250 to 5,000 lbs.



#### SafeHold® XPL

- Manually operated for flats or rounds
- Easy to operate handle
- Six models available
- Capacity: 300 to 3,500 lbs.



#### SafeHold® EPL

- Permanent lifting magnets require no power supply
- · Four models available
- Capacity: 450 to 7,500 lbs.



#### SafeHold® APL

- Hands-free operation
- Crane operated on/off mechanism
- Four models available
- Capacity: 600 to 3,800 lbs.



#### **Multi Magnet Lift System**

Eriez offers a wide range of electro lift magnets in single or multiple configurations to lift larger objects.



#### SafeHold® MPL

- AC electrically operated permanent lift magnet
- No DC converters or batteries
- · Capacity: 3,000 lbs.

#### MAGNETIC MATERIAL HANDLING



#### Magna Rolls

Located on conveyor lines. Magna rolls magnetically feed and handle steel pipe, tubes and bar.



Hold ferrous parts to conveyor belts at high speeds and steep inclines.



**Magnetic Sheet Fanners** Magnetic circuit makes light or heavy-gauge steel separate and fan easily.



#### **WORLD AUTHORITY IN SEPARATION TECHNOLOGIES**



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