



# Metal Separation

**PRODUCT SELECTION GUIDE**



**MAGNETIC SEPARATORS • METAL DETECTORS**



### ProGrade Magnets

A full line of low-cost magnetic separators, most are ready to ship. PROGRADE® features magnetic tubes, grates, plates, liquid line traps and grate-in-housings... many available in ceramic, Rare Earth and **Xtreme®** Rare Earth circuits.

### Metal Detector/Conveyor Quick Ship Program

Eriez stocks various metal detector aperture heights and stainless steel, wash down conveyor widths for quick assembly and delivery. The variable speed conveyors are available in 6, 12, 18 and 24-inch widths with a food-grade polypropylene belt.



### EriezXpress™

Many of Eriez' most popular magnetic separators, vibratory feeders and controls are stocked and available for next-day shipment.

### Pull Test Kits — Check Magnetic Strength

Available with either a N.I.S.T. certified digital or mechanical scale, these kits provide everything you need to track the strength of your magnets over time.



*Ready-to-Ship  
Metal Detectors*








*Pull Test Kits*

# Tube Magnets

# Permanent Grate Magnets



Tube Magnets	Grate Magnets	PM Grate-in-Housings	Grate-in-Housing	Round Grate-in-Housing	Grates-
<p>Low cost, versatile magnets remove ferrous contaminants from either dry or liquid applications. Typically used in areas where conventional grate magnets will not fit.</p> <ul style="list-style-type: none"> <li>• 1-inch diameter tubes</li> <li>• Alnico, ceramic and Rare Earth options</li> <li>• 316 Stainless Steel construction</li> <li>• Customized to any length</li> <li>• Capable of handling temperatures up to 800°F</li> </ul>  	<p>Simple, effective separators for hoppers and floor openings</p> <ul style="list-style-type: none"> <li>• Excellent product contact</li> <li>• High separation efficiencies</li> <li>• Multiple tube spacing available</li> <li>• Infinite sizes available</li> </ul>  	<p>Designed for the plastics industry to remove ferrous contaminants. Mounts above extruder or injection feed throat to increase mold and machine uptime and improve product purity.</p> <ul style="list-style-type: none"> <li>• Compact, low cost stainless steel housing</li> <li>• Convenient drawer-style grate</li> <li>• Offset tube configuration maximizes magnetic surface area</li> <li>• Powerful PM Rare Earth high temperature magnets</li> <li>• Aftermarket PM RE drawers available for your existing housing</li> </ul>	<p>Ready to install, constructed with multiple grates in a stainless steel housing. Very efficient to remove ferrous contaminants from free flowing material.</p> <ul style="list-style-type: none"> <li>• Stainless steel housing and grate framework</li> <li>• Easy-to-Clean design available</li> <li>• Available with vibrators to shake loose material that may adhere or build up on the magnetic tubes</li> <li>• Optional inlet and outlet transitions are available</li> </ul> 	<p>Designed for convenient installation in round pipe process applications. Swing bolts provide easy to clean access.</p> <ul style="list-style-type: none"> <li>• Mild or stainless steel housing and grates</li> <li>• Staggered grates maximize magnetic surface area</li> <li>• Multiple diameters and magnet strengths are available</li> <li>• Low profile</li> <li>• Low volume flows</li> </ul>	<p>Slowly rotating circuit removes contaminated, sticky materials with build-up or common. Typically installed in an enclosed area.</p> <ul style="list-style-type: none"> <li>• Mild steel stainless construction</li> <li>• Optional gear motor</li> <li>• Flanged for easy installation</li> <li>• Specialty magnets available for automatic</li> </ul>

# Dry Mineral Processing



High Intensity Rare Earth Roll Magnetic Separator	Low Intensity Dry Magnetic Separator	Dry Vibrating Magnetic Filter	Electrostatic Separator	
<p>Magnetic rolls to remove fine weakly magnetic contaminants in processing lines that do not respond well to traditional methods of extraction.</p> <ul style="list-style-type: none"> <li>• 4- and 6-inch diameter rolls</li> <li>• 5- to 60-inch roll widths</li> <li>• Available in single, double and triple stage machines</li> <li>• Attracts small and large ferrous and paramagnetic materials</li> <li>• Widely used in heavy mineral sands processing plants</li> </ul>	<p>Permanent magnetic separator for continuous, dry concentration of ferrous contaminants from mineral processing lines.</p> <ul style="list-style-type: none"> <li>• 300- to 1,500 fpm</li> <li>• 5- to 40 tph per foot</li> <li>• Stainless steel construction</li> <li>• Concentration of magnetite in dry processing plants</li> <li>• Multi elements for better selectivity</li> </ul>	<p>Electromagnetic filter to remove fine, ferrous contaminants from dry, high purity powder.</p> <ul style="list-style-type: none"> <li>• High intensity, high gradient magnetic field</li> <li>• High frequency, low amplitude vibration</li> <li>• Two magnetic field strengths available</li> <li>• Four sizes available</li> <li>• 4- to 12-inch diameter</li> <li>• 800- to 7,200-lbs/hr capacity</li> </ul>	<p>Separates conductive and nonconductive particles from free flowing materials.</p> <ul style="list-style-type: none"> <li>• Utilizes surface conductivity</li> <li>• 14- by 60-inch polished steel separation rolls</li> <li>• 2,000- to 3,000- lbs/hr capacity</li> </ul>	<p>The con or r op ind</p> <ul style="list-style-type: none"> <li>• C</li> <li>• C</li> <li>• L</li> <li>• M</li> <li>• V</li> <li>• e</li> <li>• a</li> <li>• S</li> </ul>



# Liquid Line Magnetic Trap Separators



Rotary Housing	Pneumatic Magnet Separators	Model B Trap	Model T Trap	Model L Trap	Model U Trap
<p>Rotary housing design moves ferrous material from gravity lines. Ideal for powdery or chunky material where material caking is a concern. Typically used in applications requiring a closed system.</p> <p>Available in 16 RPM or 32 RPM motor drive housing for easy installation. Available in sanitary designs for easy and clean cleaning.</p>	<p>Designed for gravity or 25 psi pneumatic conveying lines using a radial field (RF) cartridge to remove ferrous contaminants from dry materials. Housing provides easy access for cleaning.</p> <ul style="list-style-type: none"> <li>High strength, permanent, Rare Earth magnetic elements</li> <li>Stainless steel housing construction</li> <li>Removable magnet element for easy cleaning</li> <li>High-pressure units available</li> </ul>	<p>Assembled with tube magnets welded to the lid, these traps remove ferrous and some non-magnetic contaminants in liquid line applications.</p> <ul style="list-style-type: none"> <li>For use in 2- to 4-inch pipelines</li> <li>316 Stainless steel construction</li> <li>Available in sanitary models</li> <li>NPT, ferrule and flanged ends available</li> <li>Water jacketed options</li> </ul>	<p>Heavy-duty construction and long magnetic elements provide effective removal of ferrous and heavy, non-magnetic contaminants from liquid product flows.</p> <ul style="list-style-type: none"> <li>For use in 6- to 30-inch pipelines</li> <li>Stainless steel construction</li> <li>Bottom plug to drain sump</li> <li>Withstands pressures up to 75 psi</li> </ul>	<p>These stainless traps are designed for smaller pipe diameters with pressures up to 150 psi.</p> <ul style="list-style-type: none"> <li>For use in 2-inch pipelines</li> <li>Can be adapted to lines as small as 1/2-inch</li> <li>Stainless steel construction</li> <li>Withstands pressures up to 150 psi</li> <li>Optional filter element to catch nonmagnetic fines</li> </ul>	<p>Removes fine and weakly magnetic contaminants from difficult-to-flow or chunky product lines. U traps are ideal for stringy or chunky product type applications.</p> <ul style="list-style-type: none"> <li>For use in 3- or 4-inch pipelines</li> <li>Standard unit is sanitary</li> <li>Stainless steel construction</li> <li>High-temperature and stronger magnetic circuits available</li> <li>Withstands pressures up to 50 psi</li> </ul>

## Wet Mineral Processing

## Ball Mill/SAG Mill Ball Separator

## Recycling NonFerrous Metal Separator






WLIMS and WMIMS Wet Low/Medium Intensity Magnetic Separators	WHIMS Wet High Intensity Magnetic Separator	Trunnion Magnet	Eddy Current Separator
<p>These wet drums are used for continuous recovery of magnetite ferrosilicon in heavy-media separations like coal, iron ore and industrial materials.</p> <p>Concentration of magnetite and weakly magnetic ores</p> <p>Capacities of up to 120-tph</p> <p>Low intensity to 750 gauss</p> <p>Medium intensity to 1150 gauss</p> <p>Wide range of intermediate elements for selective applications</p> <p>Several tank styles available</p>	<p>High capacity, continuous removal or concentration of weakly magnetic materials in minerals processing.</p> <ul style="list-style-type: none"> <li>Removes impurities from non-metallic minerals including hermetic iron ore, metallic ores, rare ores and more</li> <li>Maximum recovery on even weakly magnetic materials</li> <li>Patented dual jiggling washing for higher separation</li> <li>Wide range of models and sizes</li> <li>200-tph capacity</li> </ul>	<p>Removes worn or broken grinding media from ball/SAG mill discharge.</p> <ul style="list-style-type: none"> <li>Permanent magnetic circuits for low operating costs</li> <li>Low maintenance</li> <li>In-line installation eliminates product handling</li> </ul>	<p>Separates <i>nonferrous</i> materials using Rare Earth magnets arranged into a super high-speed rotor producing repelling eddy currents. Typically used to separate aluminum, brass and copper.</p> <ul style="list-style-type: none"> <li>Separates aluminum and other NF metals</li> <li>Up to 84-inch widths</li> <li>Concentric and eccentric rotors</li> <li>Multiple rotor designs for optimized nonferrous removal</li> </ul>

# Permanent Plate Magnets



Dr



Flange Mount Plate Magnets	Hinged Plate Magnets	Suspended Plate Magnets	Deep Reach Separator	Hump & Round Pipe Separators	Drum Magnet
<p>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 free flowing product application.</p> <ul style="list-style-type: none"> <li>• 3/4-inch wide flanges for sealing purposes</li> <li>• Alnico, ceramic, Rare Earth and Xtreme Rare Earth strengths</li> <li>• Provides up to 3- to 4-inch magnetic field reach</li> <li>• Stainless steel construction</li> <li>• Wide range of sizes available</li> </ul> 	<p>Eriez exclusive "pinge" hinge design provides easy access for cleaning. Convenient latch construction makes cleaning a quick and easy operation.</p> <ul style="list-style-type: none"> <li>• Uses Eriez Xtreme Rare Earth magnets</li> <li>• Stainless steel construction</li> <li>• Provides maximum separation efficiency</li> <li>• Stripper plates available for easy cleaning</li> </ul> 	<p>Known as the Brute series, typically these heavy duty magnets are suspended over conveyed materials to remove larger tramp ferrous.</p> <ul style="list-style-type: none"> <li>• 4- to 6-inch magnetic field reach</li> <li>• Deepest reach plate magnets available</li> <li>• Ideal for suspended applications where space is limited</li> <li>• Typical suspension height is less than 6 inches</li> </ul>	<p>Opposing magnet configuration provides superior ferrous contamination removal from light, fluffy, sticky or lumpy product flows.</p> <ul style="list-style-type: none"> <li>• Low profile ideal for tight spaces</li> <li>• Xtreme Rare Earth magnet circuits available to remove fine or weakly magnetic contaminants</li> <li>• Stainless steel construction</li> <li>• Hinged access for easy cleaning</li> <li>• Easy to clean and automatic cleaning options</li> </ul>	<p>Custom housings with multi-plates arrangement redirects material flows to improve magnet surface contact of tramp metal. For free flowing gravity or pneumatically conveyed material.</p> <ul style="list-style-type: none"> <li>• De-Sta-Co clamps for easy operation and maintenance</li> <li>• Mild or stainless steel construction</li> <li>• Available in various magnet strengths depending on application</li> <li>• Minimized overall height for difficult retrofit installations</li> <li>• Units available for low pressure applications</li> </ul> 	<p>Drum only for existing houses or structures in many sizes.</p> <ul style="list-style-type: none"> <li>• Automatic self-cleaning operation</li> <li>• Criss-cross, agitation, Rare Earth and salient pole Rare Earth styles</li> <li>• Ideal for high volume ferrous removal</li> </ul>

# Metal Detection Systems - Ferrous/Non Ferrous/Stainless Steel



Xtreme® Metal Detector	Xtreme® Metal Detector w/ Conveyor	Liquid Line Metal Detector	FF Metal Separators	MetAlarm Metal Detector	1200 Series Metal Detectors
<p>Detects fine metallic particles in production or packaging of food and other products. Can detect a .2mm stainless steel sphere.</p> <ul style="list-style-type: none"> <li>• Wide range of aperture heights and widths</li> <li>• High sensitivity</li> <li>• Touch-screen interface with remote communication</li> <li>• High pressure washdown</li> <li>• Stainless steel construction</li> <li>• Reject confirmation</li> </ul> 	<p>Detector with integral conveyor to reduce interference, improve performance and mobility.</p> <ul style="list-style-type: none"> <li>• Available in standard and custom conveyor widths and belt lengths</li> <li>• Quick ship program less than two weeks</li> </ul> 	<p>Detector enhances product purity and protects vital downstream equipment from metal in the product stream.</p> <ul style="list-style-type: none"> <li>• 1.5, 2, 3, 4" pipes with or without stand</li> <li>• Sanitary automatic 3-way reject ball valve</li> <li>• Can be used in conjunction with an Eriez Magnetic Trap</li> </ul>	<p>Separate metal contaminants in bulk goods under free-fall conditions.</p> <ul style="list-style-type: none"> <li>• Detects all metal types</li> <li>• Eight standard pipe sizes</li> <li>• Separate detection and reject unit</li> <li>• Adjustable sensitivity</li> <li>• Reject spout can be rotated 360°</li> <li>• Quick reject operation to minimize lost material</li> </ul>	<p>Detects all metals and protects granulators in conveyed processing lines.</p> <ul style="list-style-type: none"> <li>• Easy installation on conveyors up to 72-inches wide</li> <li>• Detects ferrous and nonferrous metals</li> <li>• Lightweight design</li> </ul>	<p>Detects all metal types on conveyed materials. This series effective with high speed conveyors and provides high sensitivity.</p> <ul style="list-style-type: none"> <li>• Designed for indoor and outdoor use</li> <li>• Available in multiple belt widths</li> <li>• Easy to install</li> </ul>

# Drum Separators

# Pully Separators

# Suspended Magnetic Separators



Drum-in-Housing	Scrap Drum Electro & Permanent	Pulley Separator	Permanent Suspended Magnet	Suspended Electro Magnets	Specialty Electro Magnets
<p>Drum magnet in a heavy-duty housing with feed protection, an adjustable splitter and discharge chutes (optional). Wide range of applications.</p> <ul style="list-style-type: none"> <li>• Self-cleaning for high volume, automated ferrous removal</li> <li>• Separates ferrous from other material</li> <li>• Available to 36-inch diameters, 72-inch widths</li> <li>• Criss-cross, agitation, Rare Earth and salient pole Rare Earth styles</li> </ul>	<p>Heavy-duty, high volume ferrous separation typically found in scrap metals recycling. The P-Rex Rare Earth model is possibly the strongest permanent magnet on the planet.</p> <ul style="list-style-type: none"> <li>• Available to 84-inch diameters, 72-inch widths</li> <li>• Up to 15-inch magnetic field reach</li> <li>• Available in permanent and electromagnet versions</li> <li>• Ideal for high volume, heavy duty applications</li> </ul>	<p>This magnet replaces the head pulley on a conveyor, attracting and holding the ferrous metal to the belt achieving very effective separation.</p> <ul style="list-style-type: none"> <li>• Self-cleaning, low cost operation</li> <li>• 8- to 36-inch diameters</li> <li>• Available in permanent and electromagnet construction</li> <li>• Ideal for high speed, heavy burden depths and hard-to-separate materials</li> </ul>	<p>Suspended above a conveyor, these powerful magnets remove large tramp metals from conveyed materials with deep burden depths. Typically, used to remove damaging tramp metals to protect downstream equipment.</p> <ul style="list-style-type: none"> <li>• No operating costs</li> <li>• Simple installation</li> <li>• Self-cleaning models available</li> </ul> <div data-bbox="746 861 993 987" data-label="Image"> </div> <p data-bbox="746 997 939 1039">Self-Cleaning Model</p> <p data-bbox="785 1039 954 1081"><b>ERIEZ Xpress</b></p>	<p>Same purpose as permanent models, electros offer greater flexibility and strength as well as different magnetic fields for specific applications. Offers very large models as well.</p> <ul style="list-style-type: none"> <li>• On and off ability</li> <li>• Wide variety of sizes to cover all conveyor widths</li> <li>• Five-year warranty on coil assembly</li> <li>• Self-cleaning or manual-cleaning models</li> <li>• Six EriezXpress models available in 10 days</li> </ul>	<p>Air cooled, superconducting units are available for extreme environments.</p> <ul style="list-style-type: none"> <li>• U.L. and CSA Magnet designs for hazardous locations</li> <li>• Dry magnet designs (no oil)</li> <li>• Upgraded coil for high altitude or high temperatures</li> </ul>

## Eriez Unique Time and Cost Saving Programs



### CFP Metal Separator

Separates metals from a slow moving column of material above an extruder or injection machine.

- Detects as small as 0.3mm
- Compact design
- Automatic metal removal



### Eriez Xpress Program

Stocked for express shipment of popular products, such as tubes, plates, grates, traps, suspended magnets as well as feeders, feeder controls, coolant cleaners, lifting magnets and more.

- Many products are in stock
- Feeders Fast – 5 day assembly
- Metal Detector Quick Ship Program
- Next-day to 10-day delivery



### ProGrade Magnetic Separators

Permanent magnetic separators such as plates, grates, tubes, easy to clean grate magnets and trap assemblies available for quick shipment.

- Ceramic, Rare Earth and Xtreme® power levels available
- Low cost, high efficiency permanent magnets
- Available in numerous sizes and designs





## Metal Separation

Eriez is the world leader in advanced separation technology involving magnetic equipment. Equipment featured in this Selection Guide is used to either remove unwanted tramp metals or metal contaminants from a material flow, or to separate or concentrate magnetic material. This includes wet or dry processes and coarse to very fine materials.

## Removing Unwanted Metal Contaminants

Whether it's ensuring your food products and plastic packaging are free of metal contaminants or protecting expensive stone crushers from damaging tramp metal, Eriez offers a wide range of solutions to get the job done. Powerful permanent and electromagnets remove ferrous metals and highly sensitive metal detectors effectively detect nonferrous metals like aluminum, brass and stainless steel, as well as ferrous contaminants.

## Recovering and Concentrating Ferrous Materials

Magnets are very effective in applications where the goal is to concentrate ferrous minerals or to separate and recover valuable iron or ferrous metals. These are often heavy-duty or high-volume applications like sorting and recovering all metals in auto shredding, scrap yards and recycling facilities. Similarly, highly advanced magnetic systems are used to extract iron ores and other minerals in mining operations.

## "Double Team" for the Ultimate Protection

There's no better way to safeguard against damaging metal contaminants than double-teaming them with magnetic separators and metal detectors.





# Eriez' worldwide system of manufacturing, sales and service



## Metal Detection Products

Home to the broadest range of metal detectors in the industry. Whether it's tiny ferrous or nonferrous metal contaminants, tramp metal or digger teeth, Eriez has a metal detector to solve practically every metal contamination problem.



## Separation Products

Separation includes magnetic plates, grates, and traps, rolls and tubes, drum separators, ferrous traps, magnetic pulleys, nonferrous eddy current separators, and electromagnetic separators designed to remove fine and large tramp iron from various materials while protecting machinery.



## Material Handling Products

Solutions include vibratory, mechanical and magnetic conveyors, screeners and feeders. Material quantities range from a few spoonfuls to tons per hour. Screeners include high capacity gyratory units for high viscosity liquid/solid separation and wet or dry classification.



### World Authority in Separation Technologies

Headquarters: 2200 Asbury Road, Erie, PA 16506-1402 U.S.A.  
Telephone: 814-835-6000 • 800-345-4946  
Fax: 814-838-4960 • International Fax: 814-833-3348  
Web Site: <http://www.eriez.com> e-mail: [eriez@eriez.com](mailto:eriez@eriez.com)

Manufacturing Facilities: AUSTRALIA • BRAZIL • CANADA • CHINA • INDIA • JAPAN • MEXICO • SOUTH AFRICA • UNITED KINGDOM • UNITED STATES



Eriez and Eriez Magnetics are registered trademarks of Eriez Manufacturing Co.

©2014 ERIEZ MAGNETICS

ALL RIGHTS RESERVED