



# *SE-7000 series*

## SUSPENDED ELECTROMAGNETS



**6 MODELS  
AVAILABLE IN  
10 DAYS.**  
Ask about EriezXpress™  
shipments.

*Removes damaging tramp metal from coal,  
limestone, sand, gravel, municipal waste,  
wood products, recycled materials, other ores and almost  
any conveyed nonferrous material*



# features & benefits

## NEW DESIGN ELEMENTS:

- Exclusive oil expansion tank prevents condensation and protects against hot spots to extend coil life
- Aluminum or copper coils use Nomex insulation and fiberglass spacers to prevent shorts
- Five-year warranty on coil assembly
- New adjustable oil expansion tank design for any installation angle is mounted with slotted brackets, allowing the user to rotate the tank so the moisture drain is always on the low side
- Lift lugs now include two side-by-side holes to allow for simultaneous hoisting and installation of the suspension gear
- 23 magnet sizes, 69 standard models and hundreds of special designs available for unique applications
- Special options, including:
  - CSA approved designs for both manual and self cleaning units
  - Upgraded coil design for elevations greater than 3,000 feet above sea level
  - High fire point coolants
  - Zero speed switches
  - Dust covers
  - Pulley guards and controls
  - Permanent extensions and monitoring devices
  - Force-cooled units available for high temperature applications

## NEW! “BAM” MAGNETS

Available for very high suspension heights, deep burden depths or wider belts.

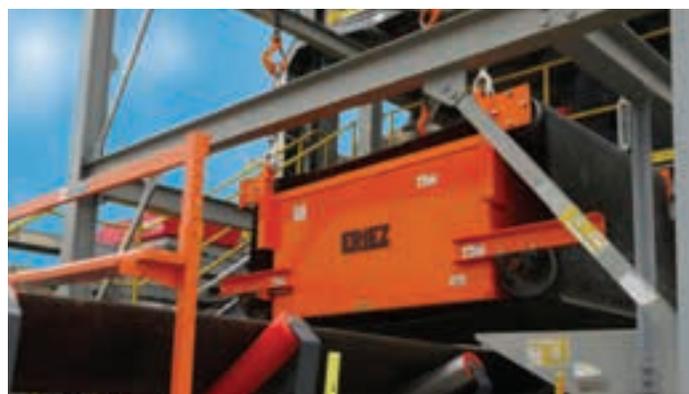


## STYLES & MODELS



### Manual Cleaning (MC) Models

All MC models are cleaned of accumulated tramp iron by turning off magnet power periodically. MC models are recommended when occasional pieces or small amounts of iron may contaminate material flow. Six models available on 10-Day Quick Ship Program (see back cover).



### Self Cleaning (SC) Models

SC models provide completely automatic iron removal and can be installed in an “in-line” or “cross belt” position (see inside). Both SC models have a short belt conveyor built around the magnet to effect automatic removal of tramp iron from the magnet face.

This system features a rubber conveyor belt, bearings, rugged but simple continuous channel frame, adjustable take-ups and shaft-mounted reducer with V-belt coupling to a TEFC motor.

*Eriez' Suspended Electromagnets are specifically engineered for conveyor belt widths up to 138 inches wide to remove large, unwanted tramp metal objects to protect processing equipment and improve product purity.*



# 7000 series

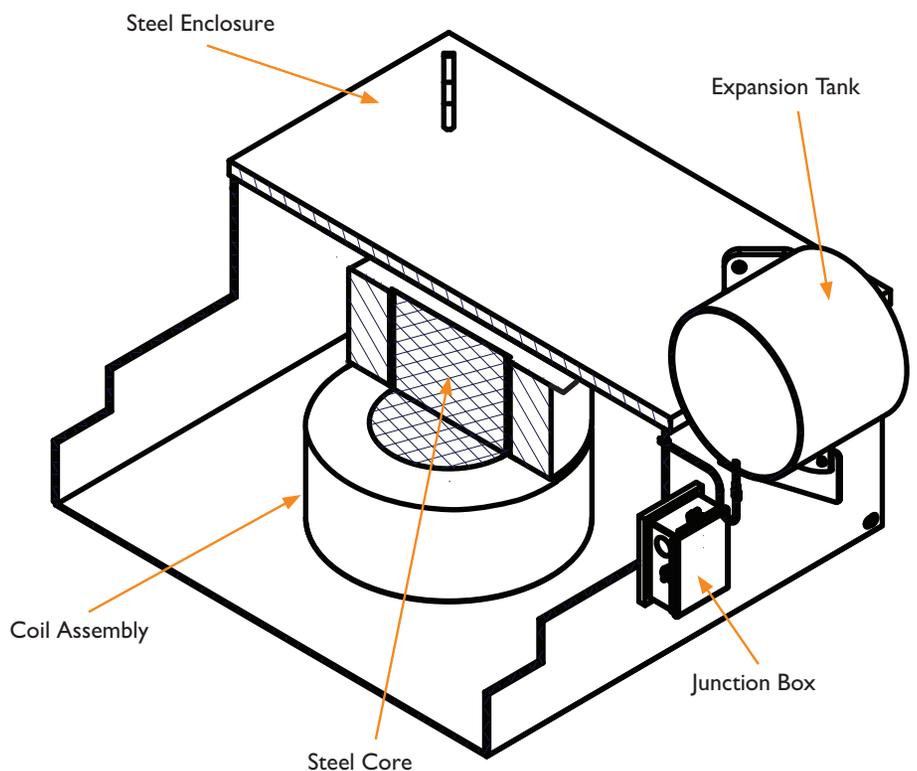
## SUSPENDED ELECTROMAGNETS



### MAGNET DESIGN

Eriez SE magnets consist of several components to provide the magnetic force necessary to attract large pieces of tramp metal. The coil, core, backbar and steel enclosure provide an efficient and effective magnetic circuit for collecting tramp metal.

### MAJOR COMPONENTS OF A SUSPENDED ELECTROMAGNET



### THE INDUSTRY WORKHORSE

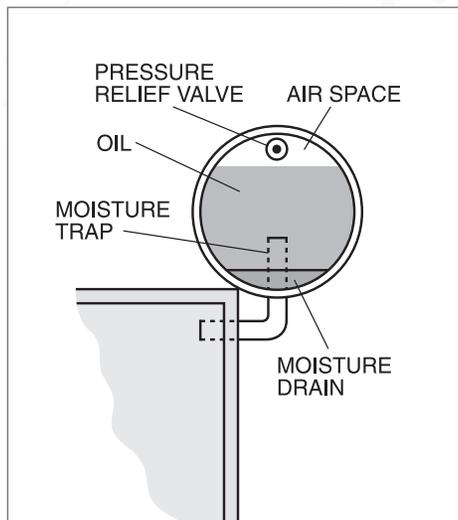
The SE magnet, providing tramp metal collection from conveyed materials, is a widely used magnetic separator. The electromagnet is typically mounted or suspended over a conveyor belt to remove large pieces of tramp metal that represent a hazard to downstream crushers, mills, pulverizers and grinders. SE magnets also remove sharp metal that can damage or tear expensive conveyor belts, especially at transfer points. Product purity is enhanced with the separation power of the SE magnet.



## EXCLUSIVE EXTERNAL OIL EXPANSION TANK:

This unique feature has helped prevent coil burnout on thousands of Eriez oil-cooled electromagnets.

Heat and moisture, the greatest enemies of electromagnets, are effectively controlled by the expansion tank which assures that the coils are always fully immersed in cooling oil. Competitive units provide air space within the magnet housing where damaging condensation forms when moist air seeps in through the pressure relief valve as the magnet cools. Eriez' expansion tank traps this moisture and keeps it out of the magnet.



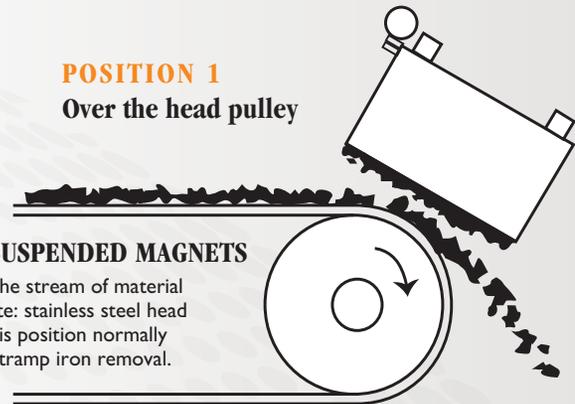
## POSITIONING SUSPENDED ELECTROMAGNETS

Suspended electromagnets are typically mounted in one of two positions over a conveyor belt

### POSITION 1 Over the head pulley

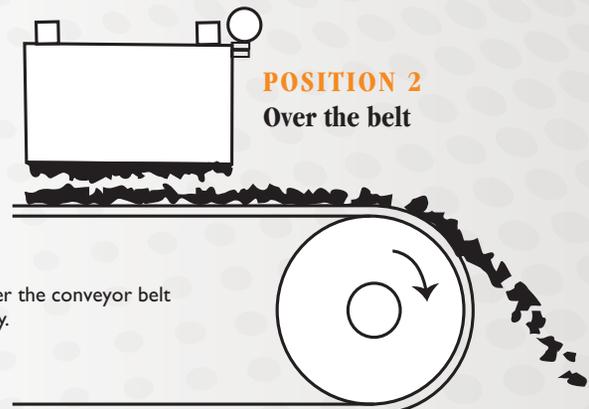
#### MANUAL CLEANING SUSPENDED MAGNETS

Magnet mounted just over the stream of material leaving the head pulley. (Note: stainless steel head pulley is recommended.) This position normally provides the most effective tramp iron removal.



### POSITION 2 Over the belt

Magnet is mounted over the conveyor belt prior to the head pulley.





## ERIEZ HISTORY

In 1941, Orange Fowler Merwin, or “O.F.” as he was known, sold equipment to grain millers. Among the most common complaints heard from his customers were about “tramp iron” - stray pieces of metal, such as bits of wire, nails and bolts, even horseshoes and hammers, that somehow found their way into the grain the farmers brought to the mills for grinding.

Merwin investigated a new magnetic alloy called “alnico” (a combination of aluminum, nickel, cobalt and iron), which possessed exceptional magnetic qualities, including peak magnetic strength up to 30 times that of cobalt steel. He devised a permanent magnetic separator in 1942 and sold it to a grain miller. His company was off and running.

## 5-STAR SERVICE® CENTER For Equipment Upgrades & Service

Eriez' 5-Star Service Center, located in Erie, PA, helps eliminate or reduce equipment downtime by ensuring that customers' equipment is quickly back in operation, functioning at peak performance. Our dedicated and experienced team of professionals is available through our hotline, 1-888-300-ERIEZ. We utilize original OEM parts and offer on-site field testing, equipment re-manufacturing and full “as new” warranties.

## GLOBAL PRESENCE

Through innovation, organization and diversification, Eriez Magnetics has evolved into a technologically advanced, financially sound international company with manufacturing facilities in Australia, Brazil, Canada, China, Europe, India, Japan, Mexico and South Africa, as well as its Erie, PA, U.S.A. headquarters. Eriez has sales offices across the United States and some 80 international markets on six continents.

Customers are assured of consistent product quality and fast response from the plant closest to them. Eriez sales engineers and service teams throughout the world reflect the same customer-oriented philosophy.

## THE ERIEZ TECHNICAL CENTER

Eriez maintains industry's largest magnetic, vibratory and inspection system test laboratory at its Technical Center in Erie, Pennsylvania, U.S.A. More than 100 pieces of specialized test equipment are on hand. Here, customer products and raw materials are analyzed confidentially for ways to separate or move, screen or detect them more efficiently and economically. Feasibility and definitive studies are also conducted.

## ERIEZXPRESS™

EriezXpress products are always in stock and ready for next day shipment from Eriez USA.

Eriez has identified those products most often ordered with fast shipment requirements. The EriezXpress program streamlines the order-to-ship process by simplifying product ordering, modifying inventory control and designating a dedicated team to make it all happen.

Upon credit approval, orders received at Eriez-USA by 4:00 PM will be processed and shipped the next business day. The many products in the Eriez Xpress program include: Plate Magnets, Grate Magnets, Trap Magnets, Vibratory Feeders, Lifting Magnets, Bin Vibrators, Coolant Cleaners, Magna-Rolls and Sheet Fanners.

**10-DAY**  
**ERIEZXPRESS**  
SUSPENDED MAGNETS

**Now Ready in 10-Days!**

ERIEZ

Get the Details!

ERIEZ

Call 888-300-3743 or visit [www.eriez.com](http://www.eriez.com)



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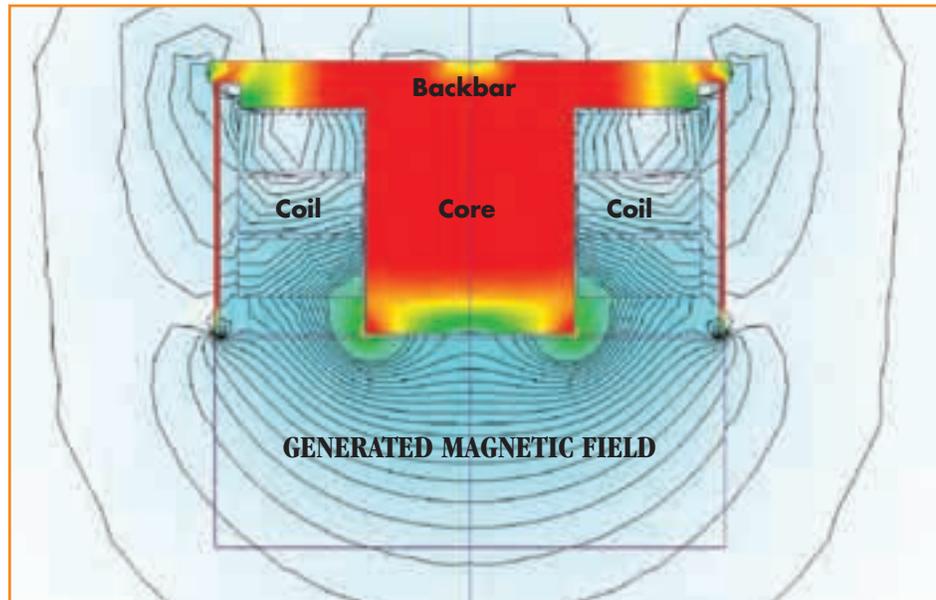
## FACTORS INFLUENCING MAGNETIC COLLECTION

**Belt speed:** As the belt speed increases, it becomes more difficult to remove ferrous components. Larger, stronger SE magnets may be required for faster belt speeds.

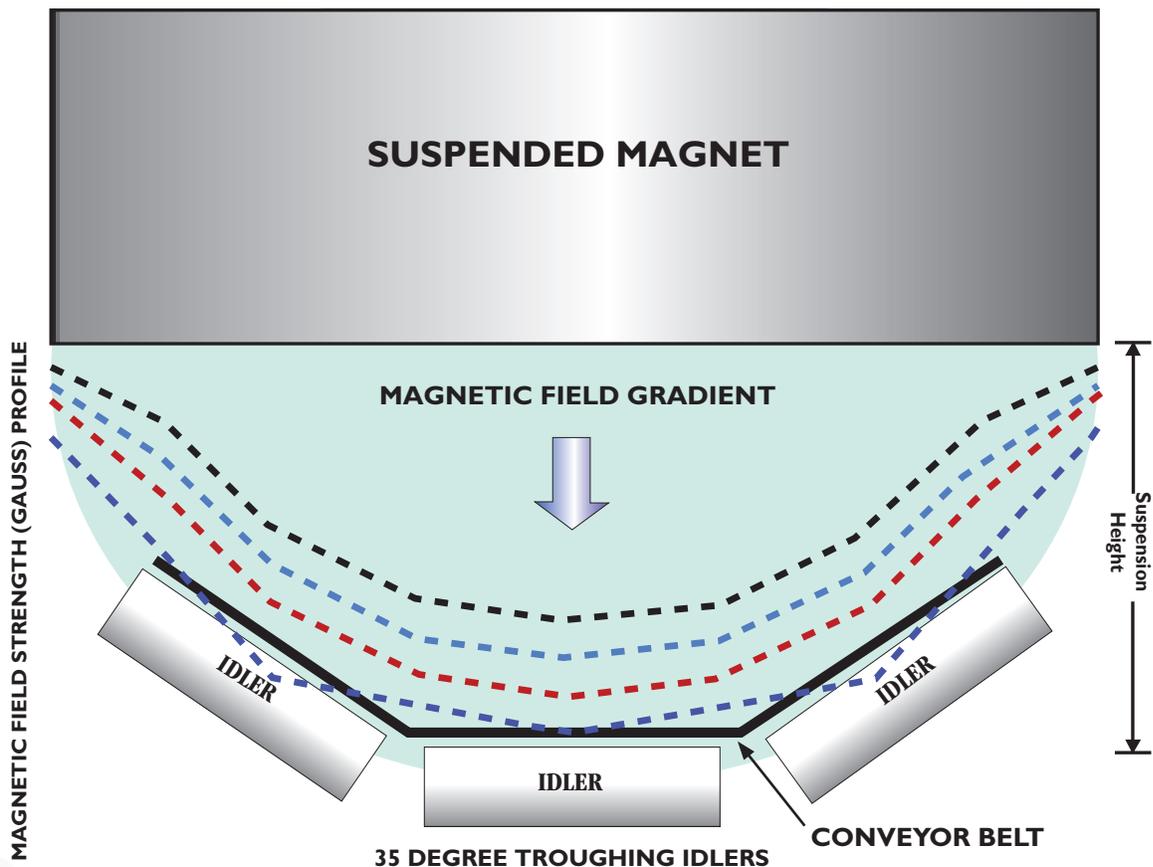
**Burden depth:** As the burden depth on the conveyor belt increases, an increase in the magnetic field strength is needed to pull the tramp iron up through the deeper burden.

**Size of ferrous component:** Small pieces of tramp metal (i.e. 1/2" hex nut, 1" cube, etc.) may be extremely difficult to remove especially when they are covered by a heavy overburden of material, compared to large items like shovel teeth, rail spikes or rebar.

**Shape of ferrous component:** Steel plate has a high surface area relative to its weight vs. a sphere which has the lowest surface area relative to its weight. Therefore, flat plates and rod shaped tramp metal are easier to remove than spherical or cube shaped tramp metal.



*Finite element analysis and modeling of a suspended electromagnet's magnetic field.*



*Typical magnetic field configuration of an electromagnet suspended over a conveyor belt. The magnetic field extends outward from the center of the magnet. The magnetic field is strongest at the center and diminishes towards the edges.*

*Note: Non-magnetic idlers are recommended for beneath the magnet.*