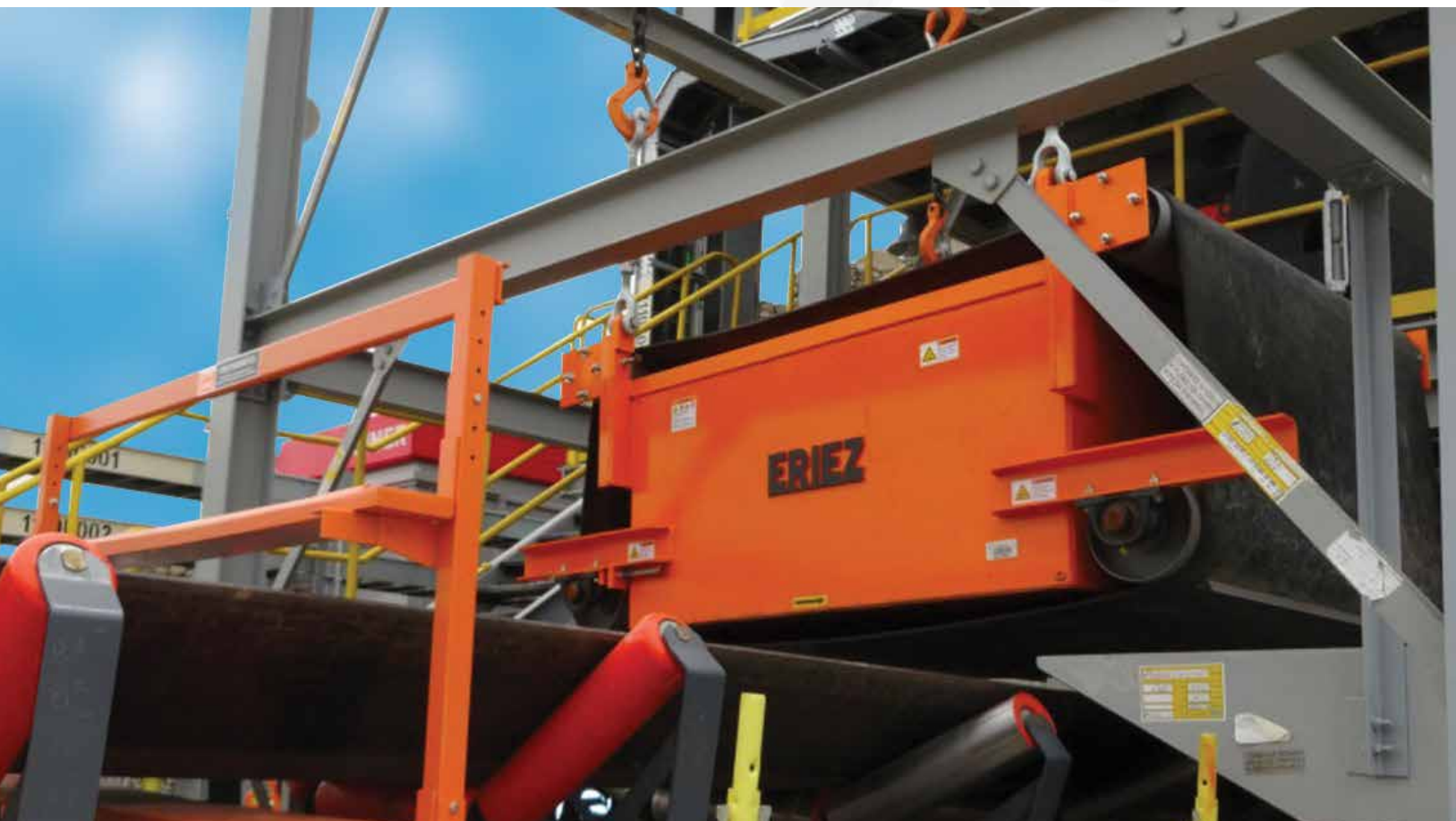


SB-323T AU



# *SE-7000 series*

## SUSPENDED ELECTROMAGNETS



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



# features & benefits

## DESIGN ELEMENTS:

- Exclusive oil expansion tank prevents condensation and protects against hot spots to extend coil life
- Aluminium or copper coils use Nomex insulation and fiberglass spacers to prevent shorts
- Five-year warranty on coil assembly
- Lift lugs include two side-by-side holes to allow for simultaneous hoisting and installation of 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
  - Coil design for elevations greater than 900 meters 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 or installations with space constraints

Eriez' largest units are 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 manually tramping the magnet to a dump location and turning off the power. MC models are recommended for material flows with low concentrations of iron or work hardend stainless steel.



### 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 for automatic removal of tramp iron from the magnet face.

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

*Eriez' Suspended Electromagnets are engineered for conveyor belt widths up to 350 cm (138 inches) wide to remove large, unwanted tramp metal objects to protect processing equipment and improve product purity.*



# 7000 series

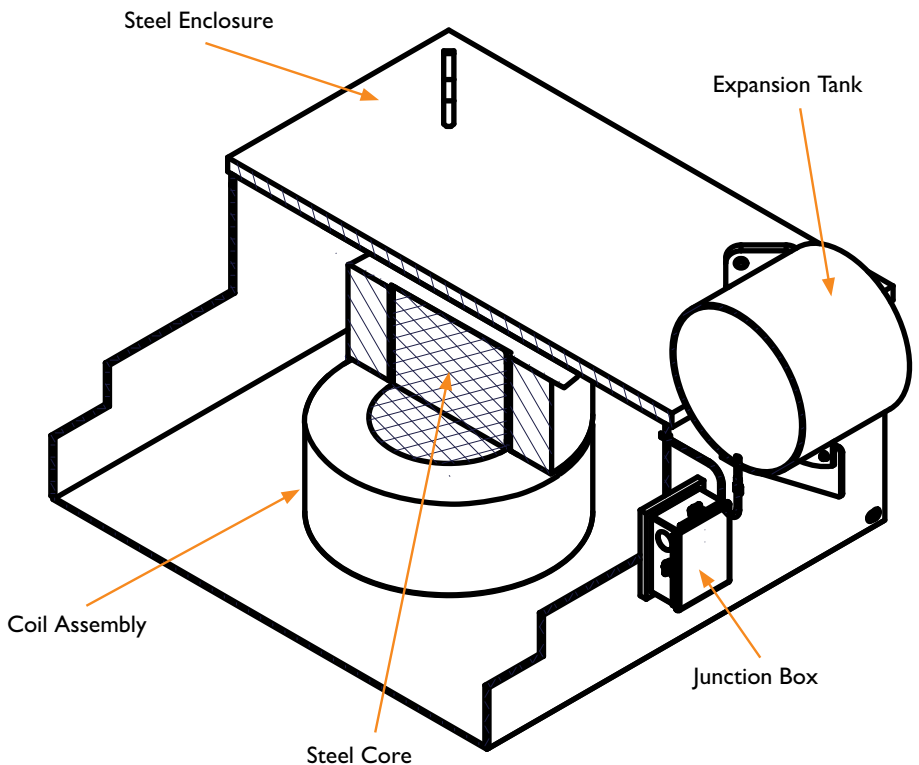
## SUSPENDED ELECTROMAGNETS



### MAGNET DESIGN

Eriez suspended electromagnets 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 Suspended Electromagnet (SE), providing tramp metal collection from conveyed materials, is a widely used magnetic separator. It is typically mounted or suspended over a conveyor belt to remove large pieces of tramp metal that represent a hazard to downstream equipment such as crushers, mills, pulverizers and grinders. Suspended electromagnets also remove sharp metal that can damage or tear expensive conveyor belts, especially at transfer points.

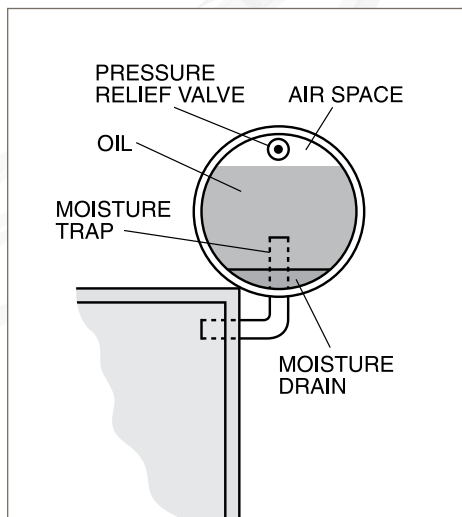




## EXCLUSIVE EXTERNAL OIL EXPANSION TANK:

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

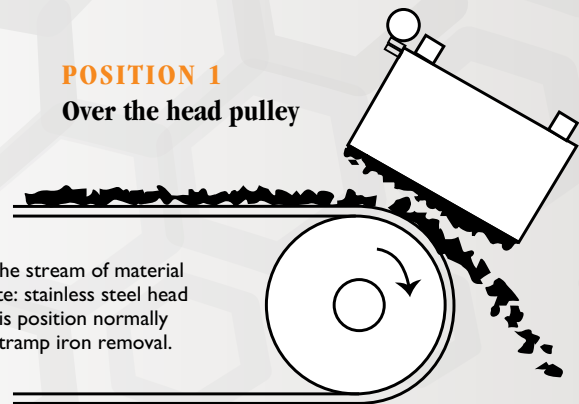
The negative effects of heat and moisture are mitigated by the expansion tank which assures that the coils are always fully immersed in cooling oil. Competitive units allow an air space to form within the magnet housing where damaging condensation collects when moist air seeps in through the pressure relief valve as the magnet cools. Eriez' expansion tank traps this moisture and keeps it out of the magnet.



## POSITIONING SUSPENDED ELECTROMAGNETS

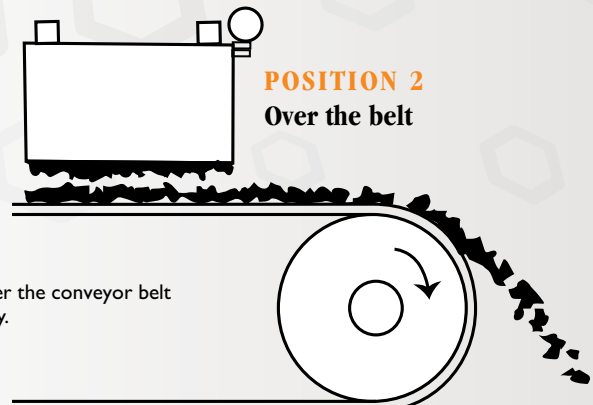
Suspended electromagnets are typically mounted in one of two positions:

### POSITION 1 Over the head pulley



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.

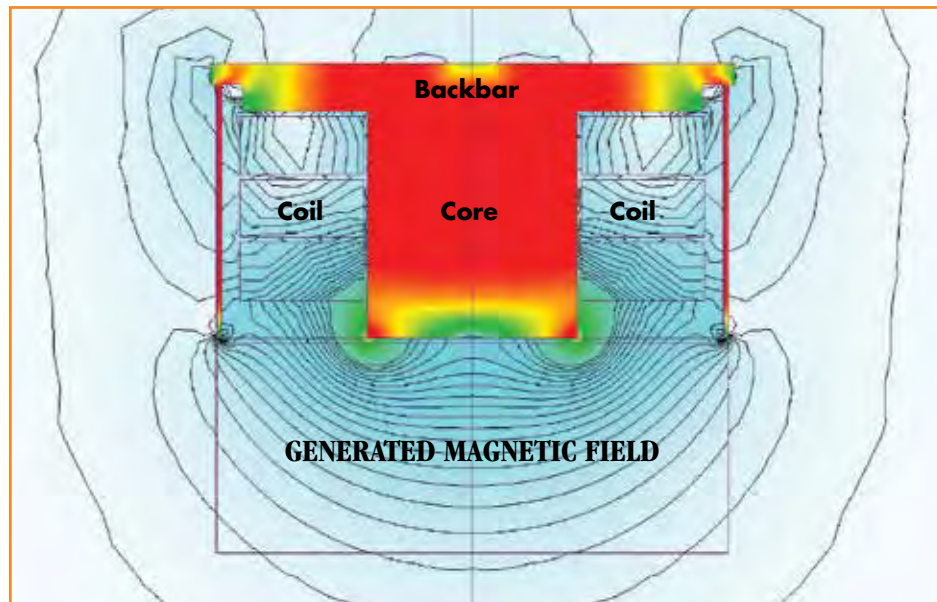
## FACTORS INFLUENCING MAGNETIC COLLECTION

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

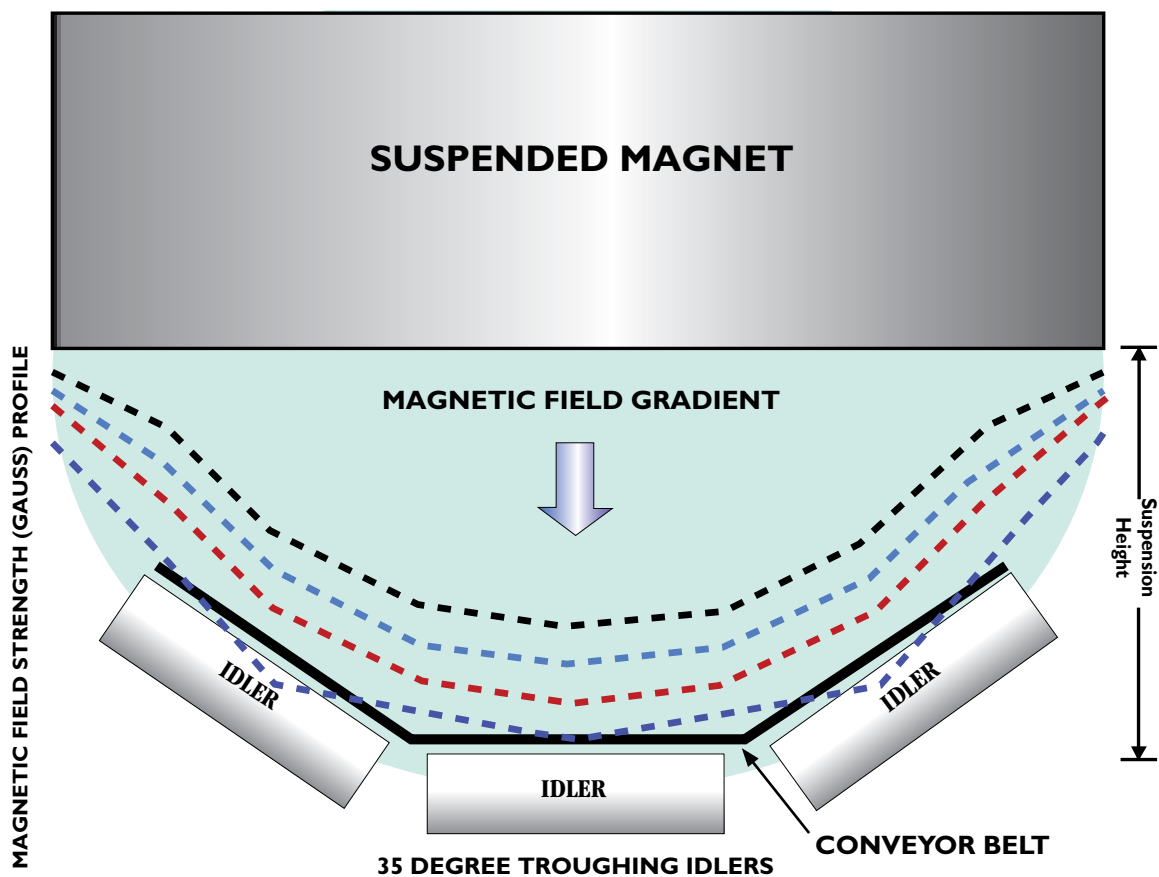
**Burden depth:** As the burden depth on the conveyor belt increases, an increase in the magnetic field strength is needed to pull the tramp iron up through the deeper burden.

**Size of ferrous component:** Small pieces of tramp metal (i.e. 1.27cm (1/2") hex nut, 2.54cm (1") cube, etc.) may be extremely difficult to remove especially when they are covered by a deep overburden of material, compared to large items like shovel teeth, rail spikes or rebar.

**Shape of ferrous component:** Flat plates and rod shaped tramp metal are easier to remove than spherical or cube shaped tramp metal due to their higher surface area to weight ratio.



*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.*



## WORLD AUTHORITY IN SEPARATION TECHNOLOGIES



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