

WET DRUM

MAGNETIC SEPARATORS



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Eriez Wet Drum Magnetic Separators are used when automatic, continuous recovery of magnetite and ferrosilicon is required, or for the concentration of magnetic ores that are in slurry form.

Available in a range of configurations and magnetic strengths, Eriez magnetic wet drums can be supplied either with our latest self-levelling, counter rotational tank design, the specialist counter-current (Steffenson design) tank or other conventional concurrent and counter rotational separators.

PRINCIPLE OF OPERATION

Regardless of tank design, the feed slurry containing both magnetic and non-magnetic fractions are directed into the 'separation zone'. The magnetic material is lifted out of the slurry and travels over alternating magnetic poles to wash out any entrapped non-magnetic particles before being discharged.



FEATURES

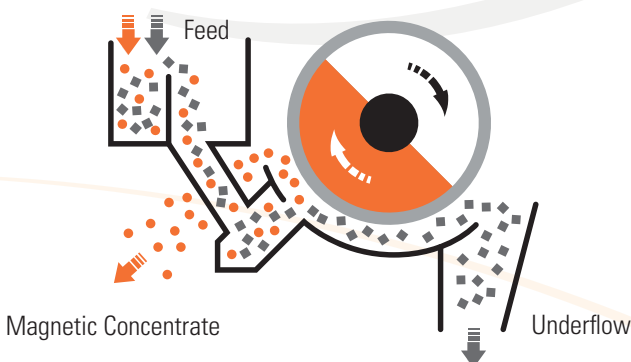
- Ferrite and Rare Earth magnetic elements for both LIMS and MIMS applications
- Multiple drum diameters and widths available for different capacities
- Integral stainless steel tank
- Replaceable drum wear wrap

APPLICATIONS

- Heavy media separation systems for coal washing or scrap metal recycling
- Iron ore beneficiation to increase grade and recovery of iron ore
- Mineral processing, removal or concentration of iron bearing minerals

SELF-LEVELLING COUNTER-ROTATION UNIT

Combining the best operational features of both conventional designs, the Eriez self-levelling, counter-rotational unit produces a high grade magnetic fraction at optimum efficiency.



ADDITIONAL FEATURES FOR SELF-LEVELLING UNIT

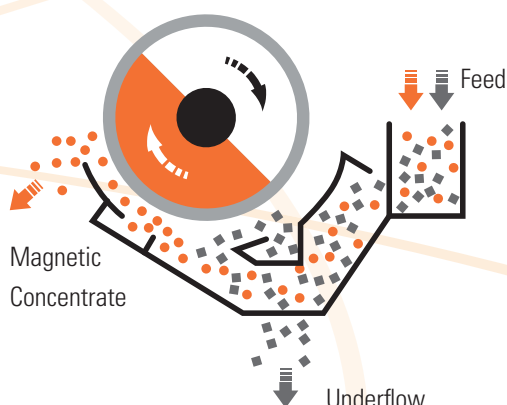
- Maintains constant slurry level in tank without adjusting discharge outlets
- Increased input capacity
- High magnetic recovery utilising 'built-in' scavenging zone

OPTIONAL EXTRAS

- Rubber tank and drum lining
- 'Trash' screens in feed box

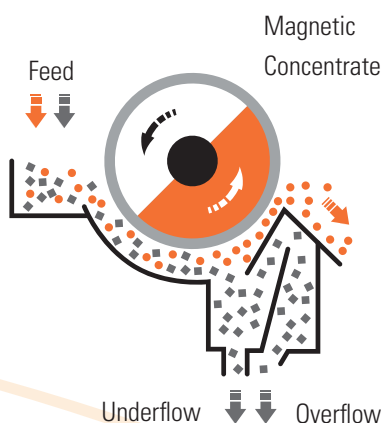
COUNTER-CURRENT TANK (STEFFENSON DESIGN)

Primarily used in the cleaner / finisher stages of iron ore beneficiation, this design can be installed either singularly or as part of a multiple system to produce a high grade magnetic concentrate.

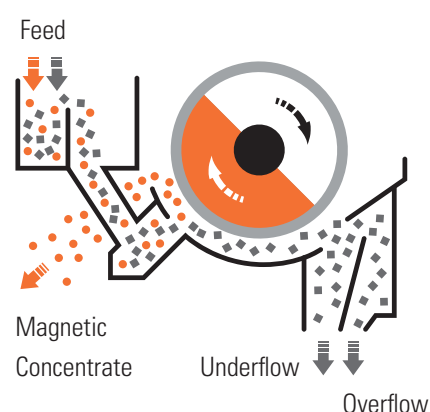


OTHER TANK DESIGNS AVAILABLE:

CONCURRENT TANK



COUNTER-ROTATIONAL TANK



VARIABLES AFFECTING THE COLLECTION OF MAGNETICS IN A WET DRUM MAGNETIC SEPARATOR:

- **Strength of magnetic field** – The magnetic field strength must be sufficient to effectively collect the type of magnetic minerals present.
- **Hydraulic capacity** – Magnetic recovery is directly related to the flowrate through the separator.
- **Percent solids** – Too high a solids content in the slurry, will result in increased magnetics losses and therefore reduce the efficiency of the unit.
- **Magnetic content** – Any given wet drum magnetic separator has the characteristic of removing a limited amount of magnetic material based on the diameter of the drum, peripheral speed and its magnetic field strength. This principle is often known as “magnetic loading”. Exceeding the limits of magnetic loading will also result in magnetics losses.

IMPORTANT FACTORS FOR SIZING

- Application – heavy media operation, iron ore beneficiation or other
- Volumetric capacity of slurry (m³/hr)
- Dry solids capacity (t/hr)
- Solids content (%)
- Percentage of solids that are magnetic
- Description of magnetic material

Contact Eriez for specific applications or laboratory testing.



ERIEZ' WORLDWIDE NETWORK OF MANUFACTURING, SALES & SERVICE



Manufacturing Affiliates in: Australia, Brazil, Canada, China, India, Japan, Mexico, South Africa, United Kingdom, USA



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