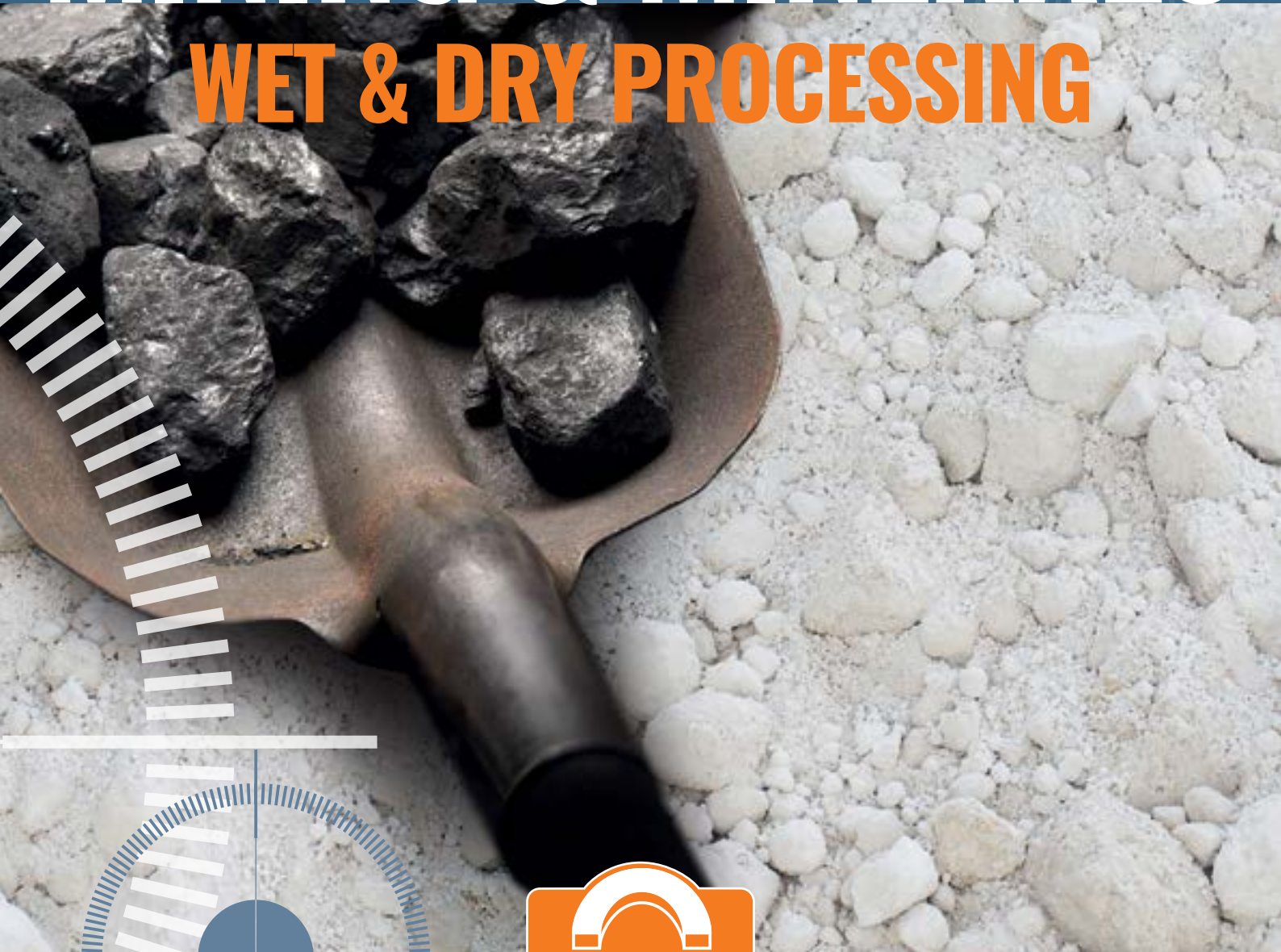


# MINING & MINERALS

## WET & DRY PROCESSING



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**WET & DRY**

# PROCESSING



## MATERIAL HANDLING & TRAMP IRON REMOVAL

Eriez is the world leader in providing equipment to detect and remove dangerous unwanted metals from materials being conveyed. These tramp metals can cause serious damage to expensive downstream processing equipment if not removed. Eriez offers a comprehensive range of metal detectors and magnetic separators to remove both ferrous and non-ferrous metals to protect machinery and reduce costly damage and downtime.

### SUSPENDED ELECTRO MAGNETS

- Remove dangerous ferrous tramp iron and protect downstream equipment such as crushers
- Prevent damage to conveyor belts at transfer points
- Provide deep magnetic field which reaches into full product depth on heavily burdened belts
- Available as both manual and self-cleaning models
- Special custom design units offered for very wide, high-capacity, high speed applications such as ship loading conveyors with rectangular core force cooled design for optimum performance
- Suitable for operation 24/7 – 365 days/year



### APRON FEEDER SUSPENDED ELECTRO MAGNETS

- Custom built high performance manual clean electro magnets for installation at discharge of apron / belt feeders
- Typical installation angle of 70° – 80°
- Typically force cooled to achieve maximum separation performance and efficiency



## SUSPENDED PERMANENT MAGNETS

- Low-cost operation for basic tramp iron removal
- Manual or self-cleaning arrangements available
- Easily installed or retrofitted into existing plants
- Available with electric or hydraulic drive
- Wide variety of magnet configurations and strengths available



## MAGNETIC PULLEYS

- Replaces the head drum/pulley on belt conveyors therefore minimum impact for retrofit into existing installations
- Compact solution for applications where space is limited
- Available in different configurations for various belt widths and depths of material flow
- Available with or without rubber lagging
- Ideal for separating tramp iron in lower section of burden close to belt
- Can be used in conjunction with suspended magnet for optimum separation



## METALARM METAL DETECTORS

- Detects unwanted non-ferrous and ferrous metals in product flows
- Able to operate with conductive / high moisture content materials
- Available in a wide variety of configurations
- Requires only low investment but offers considerable cost savings by preventing costly machine damage and associated downtime



# WET PROCESSING EQUIPMENT

Whether it's processing high volumes of iron ore or removing micron-sized ferrous or paramagnetic contaminants from valuable minerals, Eriez offers a complete range of continuous and batch magnetic solutions for wet processing. In hard-rock mining, specialised magnetic equipment improves ball mill efficiencies by removing worn steel media fragments or by using them as a protective liner.

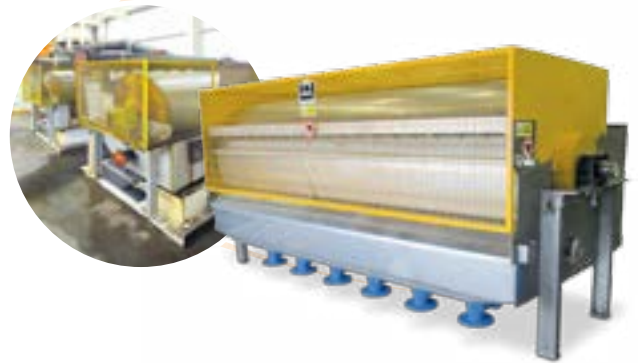
## WET LOW INTENSITY MAGNETIC SEPARATORS (WLIMS)

- High gradient ferrite interpole elements
- Used for continuous recovery of magnetite or ferrosilicon in heavy-media operations as well as for concentration of ferrous and weakly magnetic ores
- Wide range of capacities for cobbing, roughing and cleaning applications for the beneficiation of iron ore
- Multiple tank styles for higher process efficiency



## WET MEDIUM INTENSITY MAGNETIC SEPARATORS (WMIMS)

- High gradient rare earth elements customised to suit specific project requirements
- Used for concentration of weakly magnetic ores
- Multiple tank styles available for optimum separation



## MAGNETIC FLOCCULATORS

- Speeds the settling of fine magnetic particles in ore and heavy media slurries so as to facilitate their capture during further processing
- Available in multiple strengths and sizes



## DEMAGNETISING COILS

- Effectively eliminate residual magnetism in magnetite and other ferro-magnetic materials, typically after wet drum processing
- Compact and easy to install
- No maintenance required other than normal periodic inspection
- Wide range of sizes available





## HIGH INTENSITY MAGNETIC FILTERS

- Ideal for upgrading of relatively low Fe<sub>2</sub>O<sub>3</sub> content non-metallic minerals
- Electromagnetic matrix-type separator removes weakly magnetic and paramagnetic contaminants
- Matrix amplifies the magnetic field producing high-gradient collection points
- High intensity, high gradient background magnetic field ranging from 5000 up to 10,000 Gauss



## SUPERCONDUCTING POWERFLUX

- Removes micron-sized weakly magnetic impurities from non-metallic minerals such as kaolin for maximum purity and improved brightness
- Can also be used to process ultra high purity metals such as lithium
- Cryogen free operation means drastically reduced operating costs



## WET HIGH INTENSITY MAGNETIC SEPARATORS (WHIMS)

- Maximum recovery of weakly magnetic materials
- Removes impurities from non-magnetic minerals including hermitic iron ore, metallic ores, rare ores and more
- Patented dual-jigging washing for higher separation
- Up to 1 Tesla (10,000 Gauss) background magnetic field



## TRUNNION MAGNETS

- Remove steel ball fragments at the exit of ball/SAG mill operations
- Protect downstream screens, cyclones and pumps
- Increase mill capacity whilst decreasing power consumption with considerable overall efficiency and cost gains



## MAGNETIC MILL LINERS

- Wear-resistant, steel-encased magnetic “bricks” for secondary and regrind ball mills
- Magnetic liner retains ball chips and fragments creating a “self-layering” steel protective liner
- Offers greatly extended working lifetime compared to standard mill liners



# DRY PROCESSING EQUIPMENT

Eriez offers drum, roll and filter-type magnetic separators in varying degrees of intensity for the dry processing of minerals. These processes require conveyors, feeders and belts to present the material to the magnetic separators in underbelt, overbelt or gravity-fed applications

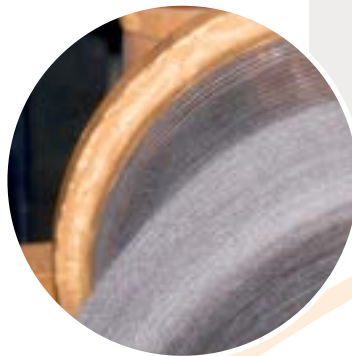
## MAGNETIC DRUMS – LOW INTENSITY (LIMS)

- Range of drum elements to ensure optimum performance for each application
- Ideal for primary scalping stage prior to high intensity separation
- Ideal for tramp iron removal from powdered / fine non-metallic minerals



## MAGNETIC DRUMS – MEDIUM INTENSITY (MIMS)

- Magnetic lines of flux concentrated in each internal pole create an extremely high-gradient magnetic field for maximum recovery
- Remove fine ferrous and strongly paramagnetic particles from minerals
- Range of drum elements and sizes to cater for all applications



## MAGNETIC DRUMS – DFA

- Low or Medium Intensity Magnetic Separator capable of dry treatment of finely ground iron ore, slag, fly ash and other difficult ferromagnetic concentration and removal problems
- Employs high strength magnetic elements and high speed shell rotation
- Three multi-pole magnetic elements for coarse and fine mineral processing
- Available for cobbing, roughing and cleaning applications in ore concentration applications
- Multiple diameters and widths available



## RARE EARTH ROLL SEPARATORS

- Minerals flow on thin belts over a series of powerful rare earth magnetic rolls to purify non-magnetic minerals
- Concentrate weakly magnetic ores such as garnet, ilmenite and wolframite
- Purify non-metallic minerals such as feldspar
- Adjustable feed rates, roll speeds and splitter position
- Minimal maintenance – quick belt-change design for reduction in production downtime
- Available in dust- enclosed housings



## DRY VIBRATING MAGNETIC FILTERS (DVMF)

- High intensity electromagnetic filter to remove fine, ferrous contaminants from dry powders
- Incorporates vibrating filter elements to provide a high-capacity material flow
- Two magnetic field strengths and four different sizes available



## VOG DISC SEPARATORS

- A multi-stage high gradient disc electromagnetic separator for the concentration or purification of dry granular minerals such as limenite, garnet, columbite-tantalite and quartz
- Produces very clean fractions with high magnetics recovery and high selectivity
- Also available as a laboratory model



## DAVIS TUBE TESTERS

- Used for determining magnetic separation characteristics of magnetic iron ores and for checking plant concentrate and tailing quality



# 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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