



Magnetic Separators

CPG Resources – Mineral Technologies

Leaders in Mineral Separation



Expertise. Experience. Superior Technology.

The Reading range of magnetic separators includes wet high intensity, induced roll, semi-lift induced roll, rare earth roll, rare earth drum, and low intensity and medium intensity magnetic separators.



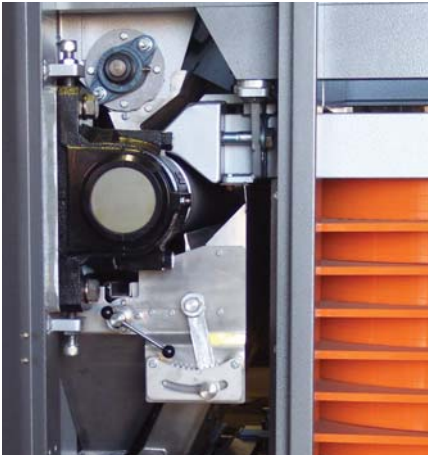
Wet High Intensity Magnetic Separator

Reading wet high intensity magnetic separators (WHIMS) have been extensively used throughout the mineral sands industry for more than 30 years and have been modified to accommodate the separation of iron ore and other metalliferous ores.

Three standard separators incorporating four, eight and 16 poles with 2.5 x 68 millimetre rotor separation matrix widths are available where a higher magnetic field gradient is required to remove weakly magnetic particles from non-magnetic concentrates. Nominal capacities range from six to 25 tonnes per hour. A wider rotor separation matrix of 2.5 x 120 millimetres in a 16 pole unit is available for upgrading iron ore fines and other higher capacity metalliferous applications up to nominal throughputs of 50 tonnes per hour.

Applications

- Recovery of ilmenite, garnet, chromite and monazite into the magnetics, and rutile, leucoxene, and zircon into the non-magnetics fractions from mineral sands suites
- Recovery of iron ore fines, including specular hematite, itabirite, taconite and limonite
- Magnetic gangue removal from cassiterite, tungsten ores, glass sands and a variety of industrial mineral products



Induced Roll Magnetic Separators

Reading induced roll magnetic separators (IRMS) have gained international recognition, with more than 500 machines in service.

Separators are available with two starts, single- or twin-pass configuration in 133 or 160 millimetre roll diameter, 760 or 1000 millimetre roll width and nominal capacities of up to 12 tonnes per hour. Semi-lift roll machines are available in all of the above magnets and pilot roll and laboratory scale magnets are available in both types.

Applications

- Removal of ilmenite from rutile concentrates
- Final magnetic cleaning of zircon
- Differentiation of ilmenite to produce feedstock for synthetic rutile production
- Removal of iron contamination from glass sand and iron minerals from industrial products
- The semi-lift roll has been designed to retreat middlings and non-magnetic products from induced roll and crossbelt magnetic separators in the mineral sands industry.



Rare Earth Magnetic Separators

Reading rare earth magnetic separators incorporate recent advances in magnet technology, using high quality rare earth alloy permanent magnets. These magnets, combined with innovative engineering, achieve the most effective dry separation of paramagnetic minerals at high throughput rates.

Rare Earth Roll Separator Configurations (RERS)

Non-magnetic, middlings and magnetic retreat configurations are available in machines with 100 millimetre roll diameter and 300, 1,000 and 1,500 millimetre roll widths. These can either be single start with one, two or three re-treat stages and various magnet/pole ratios.

Rare Earth Drum Separator Configurations (REDS)

Non-magnetic, middlings and magnetic retreat configurations are available in machines with 400 millimetre drum diameter and 300, 1,000 and 1,500 millimetre drum widths. These can either be single start with one, two or three re-treat stages and an optional low intensity drum scalper for removal of highly magnetically susceptible minerals.



Applications

- Production of ilmenite concentrate based on TiO_2 / Fe_2O_3 ratios
- Upgrading staurolite and garnet into magnetics and production of zircon into non-magnetics
- Production of silica / glass sands
- Rejection of magnetic impurities from precious gem stone concentrates
- Reduction of iron bearing contaminants from granular feed stocks
- Recycling, food processing, pharmaceutical and abrasive industries.

Low and Medium Intensity Magnetic Separators

Reading low and medium intensity wet and dry drum magnetic separators can be used for the removal of more highly susceptible magnetic particles in dense medium and other processing circuits.



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