HIGH INTENSITY RARE EARTH ROLL SEPARATORS

High Intensity, high gradient, permanent magnetic separators for optimum separation of paramagnetic particles from dry products.

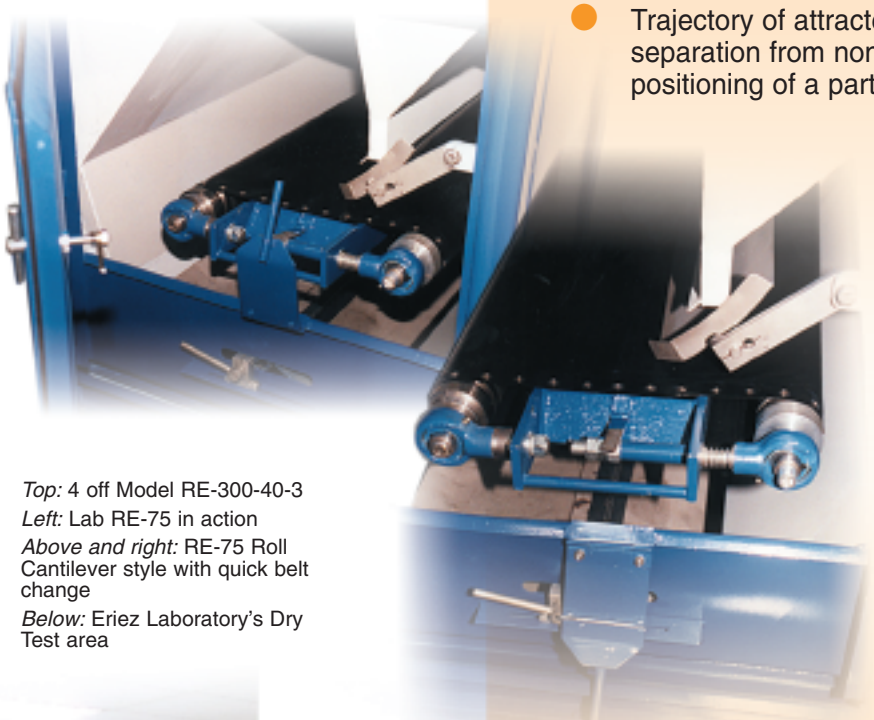
3 off Model FR-100-60-1 / RE-300-60-2

Applications

- **Mineral Processing** - used for the removal of paramagnetic minerals (biotite, muscovite, chromite, columbite-tantalite, ilmenite, etc) and fine, weakly magnetic particles from a range of non-metallic industrial minerals, such as:
  - ~ silica sand for glass production;
  - ~ feldspar for ceramics;
  - ~ beach sands;
  - ~ silicon carbides;
  - ~ magnesites; and
  - ~ other dry industrial minerals.
- **Ceramics** - employed to remove Fe_2O_3 from both raw materials and spray-dried granules.
- **Plastics Recycling** -
  - ~ for the removal of ultra-fine iron prior to non-ferrous separation on the Eriez Eddy Current Separator SR Model; and
  - ~ to separate plastic beads contaminated with small spots of iron.

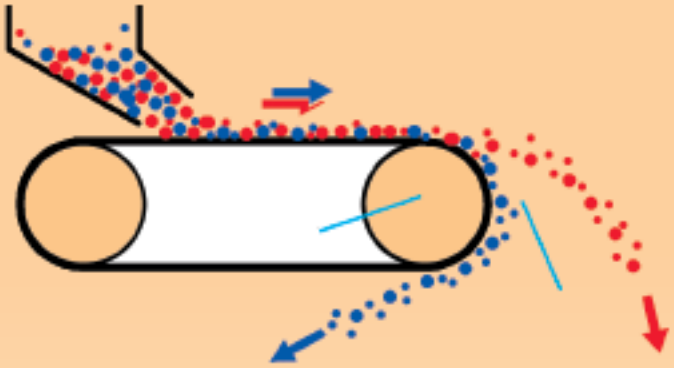
2 Pass RE-100

Features	Benefits
Technically advanced, high magnetic intensity, dry magnetic separator	Improved separation performance, giving: ~ lower Fe_2O_3 contamination ~ lower rejects ~ higher product quality and value ~ increased productivity from finite mineral reserves by recovering material previously unsaleable owing to high contamination levels ~ overall increase in market value and share
Highest grade, high stability Rare Earth magnet material used	Reliable and consistent separation over a long period of time
Adjustable feed rates, roll speeds and splitter position	~ Variable grade and recovery to suit current market demand ~ Maximising separation performance
Permanent magnet	Low energy consumption relative to electro/mains powered systems, eg Induced Magnetic Rolls
Choice of three diameter models	Ability to handle low and high production capacities with a small number of units
Quick belt change design	Reduction in production stoppage time
Minimal maintenance	Reduction in downtime
Ease of operation	Reducing man hours required during operation
Modular design	Stages can be added following initial supply giving utmost flexibility
Vertical tower design	Reduction in floor space requirements
Dust-proof housing	Reduction in airborne fines
Complete systems: low powered, ferrite separators also available to scalp strongly magnetic materials prior to separation on RE Roll	Prevention of damage to high powered RE stages and enhancing high intensity separation
Many RE Roll units successfully installed worldwide	Proven technology



Top: 4 off Model RE-300-40-3
Left: Lab RE-75 in action
Above and right: RE-75 Roll Cantilever style with quick belt change
Below: Eriez Laboratory's Dry Test area

Principle of Operation



- Simple pulley and belt system within an outer framework.
- Material is fed onto the belt by a chute or vibratory feeder.
- Belt carries material into the magnetic field of the head pulley.
- Rotating magnet attracts weakly magnetic particles.
- Trajectory of attracted particles changes, enabling their separation from non-magnetic material by careful positioning of a partition (splitter).

Models and Capabilities

- Three models - 75mm, 100mm and 300mm diameter - to handle different product types and varying throughputs.

  Higher throughputs can be achieved on the larger diameter rolls at approximately the ratios shown opposite:

  Actual capacities can only be calculated once tests have been completed in the Eriez laboratory and will vary according to material composition.

RE75	1
RE100	1.2
RE300	1.5

- Magnetic field peak of 21,000 Gauss on the surface of the Rolls.
- Flexibility in width of models to cope with variations in particle size and capacity.
- Typical particle size of feed in the range of 75µ to 13mm.

Tests conducted within the fully equipped, state-of-the-art laboratory at Eriez Magnetics European headquarters will determine the feasibility of processing material outside the above ranges.

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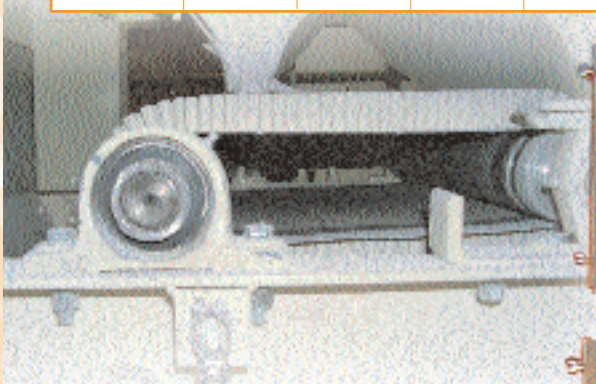
Dimensions and Weights

Model	Feed width (mm)	Overall unit length (mm)	Overall unit width (mm)	Overall unit height (mm)	Weight (kg)
RE75-10	250	1100	1200	750	140
RE75-15	380	1100	1300	750	170
RE75-20	500	1100	1400	750	240
RE75-30	760	1100	1600	750	340
RE75-40	1000	1100	1800	750	460
RE75-60	1500	1100	2000	750	710
RE100-10	250	1500	1200	750	150
RE100-15	380	1500	1300	750	200
RE100-20	500	1500	1400	750	280
RE100-30	760	1500	1600	750	380
RE100-40	1000	1500	1800	750	500
RE100-60	1500	1500	2000	750	750
RE300-10	250	1500	1200	1100	300
RE300-15	380	1500	1300	1100	425
RE300-20	500	1500	1400	1100	550
RE300-30	760	1500	1600	1100	900
RE300-40	1000	1500	1800	1100	1300
RE300-60	1500	1500	2000	1100	1800

Note: Dimensions and weights are for single stage only and are subject to confirmation as they can vary considerably depending upon application.



Above: RE-100 Roll recycling plastics

Right: 3 Pass RE-300-40-3

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