



MASTER MAGNETS INDUSTRY GUIDE



MAGNETIC SEPARATION EQUIPMENT FOR MINING AND MINERALS CONCENTRATION INDUSTRY

The range of magnetic separation equipment for use in mining and minerals concentration industry are split into two categories: Overband, Suspension and Pulley magnets are used primarily for the extraction of tramp iron from the mined product. The Overband separator is commonly installed on

OVERBAND MAGNETS

Permanent or electro magnetic self cleaning units for installation on mobile crushers or over conveyor lines, feeders and gravity chutes.



Overbands allow the continuous separation of general tramp iron from mined product. The unit is self-cleaning and low maintenance.

Overbands are available with armour-clad belting, alternative frame design

to assist belt change and as heavy duty electro magnets.

SUSPENSION MAGNETS

For the extraction of occasional tramp iron from deep product burdens. Available with air or oil cooled electro magnet system or permanent magnet system.



Can be installed over conveyor, vibratory feeder or gravity chutes for separation of fine or coarse materials.

Available with complete range of ancillary equipment to aid cleaning operation and to suit application criteria.

PULLEY MAGNETS

Installed as head pulley in belt conveyors for the continuous extraction of iron contamination.

360° magnet system retains extracted iron, discharging it behind the centre line of the pulley. Clean product follows its natural trajectory.

All units are available with either a permanent or electro magnet system. Shafts are keywayed to suit drive requirements.



RARE EARTH DRUMS

Constructed with a core of Neodymium Iron Boron, Rare Earth Drums are used where extremely high intensities are required on the face of the drum.

Suitable for the treatment of fine ferromagnetic and paramagnetic materials.

Rare Earth drums can be fitted into totally enclosed housings where product must be kept free from external contamination.



HIGH SPEED DRUMS

High Speed Drums are used for the separation of highly magnetic ores such as iron ores, nickel ores, roasted ilmenite and similar in a dry state.



Ore is fed onto the face of the drum. As the shell rotates, the material undergoes a tumbling action releasing non magnetics or partially liberated material.

The drum is mounted in a robust mild steel enclosure, supplied as standard with

inspection covers, feed hopper, product drive plates and aspirators for dust extraction.

ELECTROSTATIC SEPARATOR

An excellent complement to magnetic separation equipment, the electrostatic separator is designed for conductive/non-conductive separations utilising the differences in surface conductivity of granular particles.



The electrostatic separator can be applied to many dry, free flowing granular particles containing conductor or nonconductor minerals within the size range of 75 to 2000 microns.

mobile crushers for this purpose. The second application for the magnetic separator is in the concentration of mineral products. The separators shown below are capable of achieving the high gauss intensities necessary for wet and dry separation and concentration of paramagnetic minerals.

WET DRUM SEPARATORS

Used for the recovery of magnetite/ferrosilicon in dense media plants and for the concentration and upgrading of iron ores and similar.



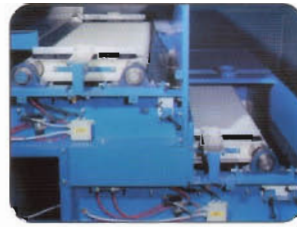
Available in single and multistage units with concurrent, counterflow and counter current tank designs

Demagnetising coils for demagnetising of magnetite following recovery are available.

MASTEROLL RARE EARTH ROLLS

Powerful Neodymium Iron Boron (Rare Earth) magnetic rolls suitable for the continual dry separation of minerals.

Masterrolls are available in single, double or triple roll configurations with auto belt tracking, enclosed guarding and variable speed belts and rolls.



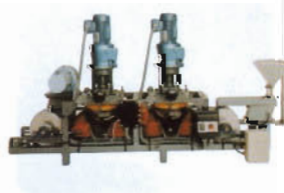
Applications include the separation of paramagnetic content from feldspar, zirconium oxide, quartz and similar.

DISC SEPARATORS

For the selective separation of a mixture of minerals of varying magnetic susceptibility in one pass with minimum entrapment.

The disc separator consists of one or more rotating discs placed above powerful electro magnet circuits.

Up to seven different products can be separated in one pass on a three disc separator.



HIGH INTENSITY FILTERS

Filters incorporate a powerful electro magnetic coil or permanent magnetic element which surrounds a matrix.

Filters are used for the continuous separation of fine paramagnetic contamination from slurries.

Filters can be designed to produce very high gauss intensities within the matrix for extremely high purity separations. Electro filters are fitted with self cleaning auto backflush systems.



INDUCED ROLL SEPARATORS

High capacity separators for the concentration of finely sized paramagnetic ores and for the purification of non metallic minerals.



Induced Roll Separators utilise the magnetic induction of rolls via powerful electro magnets to treat a variety of material. Single and multiroll arrangements up to 1000mm wide are available.

WHIM SEPARATORS

High Intensity High Gradient Wet Separators are used for the continuous extraction and concentration of fine paramagnetic materials presented in a wet state.



WHIM units can be designed as single, double, 4-station or 8-station units. The 8-station separator has a capacity of up to 160 tonnes per hours.

LABORATORY SAMPLE TESTING SERVICE

To arrive at the best separation criteria, Master Magnets uses a fully equipped laboratory for material testing to ensure optimum equipment selection.

Customers are invited to submit samples for testing and evaluating to enable separation guarantees to be given.

Initial trials are normally carried

out free of charge and customers are encouraged, if practicable, to participate in the testing and processing procedure.



LABORATORY SCALE EQUIPMENT

The MasterMag range of magnetic separation equipment can be supplied to laboratory scale.

Separators previously supplied to laboratories include induced rolls, alternating pole drums, isodynamic separators, wet high intensity separators and wet drums.

Other laboratory equipment for the minerals dresser includes ore testers and wet test chutes with feeders as required.

Laboratory scale Masterroll separator with vibratory feeder.



A HISTORY OF MINING AND MINERALS SEPARATIONS

Master Magnets has enjoyed global success with its range of pioneering magnetic separators for mining and minerals concentration industry.

Minerals separation equipment has been sold worldwide for uses ranging from the processing of iron ore and coals to extremely high quality ceramics production.

Master Magnets can provide excellent references from customers for all our

separators and have built a reputation for quality and high performance.

Type K Permanent separator with guarding installed on mobile crusher.

Four Stage WHIM separator installed in the middle east to process iron ore.



Master Magnets have over twenty five years experience providing innovative magnetic solutions to industries involved in recycling, demolition and reclamation, mining and quarrying, food processing, ceramics production and powders and minerals processing. The MasterMag range of systems are known for high performance and reliable operations including magnetic separators for metals reclamation, tramp metal protection and high intensity mineral separation.

Visit our website at www.mastermagnets.co.uk for the entire range of MasterMag magnetic separators

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