



A Bunting® Magnetics Company

CERAMICS PROCESSING INDUSTRY GUIDE



www.mastermagnets.com

The production of fine, white ceramics requires the removal of iron contamination from the raw materials. Master Magnets manufacture a comprehensive range of magnetic separation equipment separate tramp and fine iron from the product. Iron contamination can be naturally present in raw material or can be

HIGH INTENSITY FILTERS

Filters incorporate a powerful electro magnetic coil, which surrounds a matrix. The filter is used for the continuous separation of fine paramagnetic contamination from raw ceramic material slips and glazes.

Filters can be designed to produce very high gauss intensities within the matrix for extremely high purity separation. Electro filters are fitted with self cleaning auto backflush systems for continuous operation with adjustable magnetic cleaning cycle.



WIRE WRAP HIGH INTENSITY DRUM MAGNET

Constructed in the same way as a Rare Earth Drum Separator, the Wire Wrap Drum Magnet utilises a Neodymium Iron Boron magnet system, however the outer drum cover is wire wrapped in a unique way, which results in a much enhanced magnetic intensity on the drum surface. This is ideal for free flowing powder applications where the ferrous particles are very small or paramagnetic, such as quartz, fine sand, or ceramic powder processing.



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 electromagnets to treat a variety of feed material. Single and multiroll arrangements are available, giving both the magnetic and non-magnetic fractions a 'double pass' for optimum purity.

RARE EARTH DRUMS



Constructed with a core of Neodymium Iron Boron, Rare Earth Drums are used where extremely high magnetic 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 closed housings where product must be kept free from external contamination. The drums can also be supplied with Vibratory Feeders to ensure an even spread of material is presented to the drum surface.

MASTEROLL RARE EARTH ROLLS

Powerful Neodymium Iron Boron (Rare Earth) magnetic rolls suitable for the processing of fine powders.

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 removal of paramagnetic particles from quartz, feldspar and other dry ceramic minerals.



MASTERTRAP SEPARATORS

The Mastertrap is a permanent magnetic separator for the extraction of fine iron from wet or viscous product conveyed by pipeline.

Incorporating a series of high-intensity rare earth tubes, the unit is installed into existing pipelines as an effective means of magnetic protection.

Manufactured from stainless steel complete with flanges or threaded ends and available with water jacket for temperature regulation.



introduced through the process lines. The Master Magnets range of separators below can be installed at several points in the process over conveyors and chutes, through pipelines and in the final stages of pre-firing production.

GRID MAGNETS

Comprising of high-intensity rare earth magnetic tubes, magnetic grids are single or multibank racks for installations in hoppers, chutes and ducts.

Grids are available in a range of housings, with drawer openings for easy cleaning, or as self cleaning pneumatic units. Single Tubes are also available for product testing.



SUSPENSION MAGNETS

Suspension Magnets are designed for the extraction of occasional tramp iron from deep product burdens. Depending on the application requirements, the Mastermag Suspension Magnets are available with permanent magnet systems or can be supplied with an air or oil cooled electro magnet system.



PLATE MAGNETS

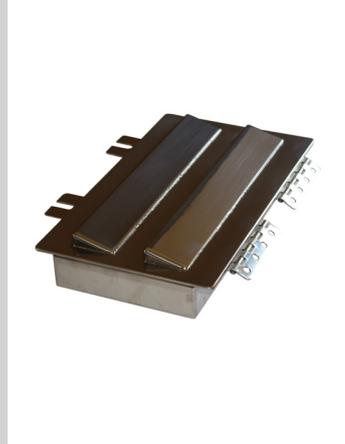


Plate Magnets are an inexpensive form of magnetic protection against occasional tramp iron contamination. Available in a range of housings and with Ferrite or high intensity Rare Earth magnetic material. Plate Magnets can be configured into 'Deep Reach' or 'Diagonal Leg' housings for deeper product burdens.

OVERBAND MAGNETS

Overband Magnets allow the continuous separation of general tramp iron from raw ceramic product. The unit comprises of either a permanent or electromagnetic core, with a revolving self-cleaning belt, ensuring low maintenance operation.



BULLET MAGNETS

The Bullet separator is a permanent magnetic separator for use in gravity feed and pressurised pipeline systems.

Material flows over the internal "bullet" system, with any extracted tramp iron being held firmly in place, whilst clean product flows undisturbed.

The Bullet Magnet is available with a high intensity rare earth magnetic system for fine iron removal or can be supplied with a Ferrite magnet system for general tramp metals.



PULLEY MAGNETS

Installed as the head pulley in belt conveyors for the continuous extraction of iron contamination. Magnetic Head Pulleys are designed for removing tramp ferrous metals from shallow burden depths of feed material. The 360° magnet system retains extracted iron, discharging it behind the centre line of the pulley, whilst clean product follows its natural trajectory.



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 ensure that separation performance can be measured, with all of the results being submitted for the clients approval.

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

In addition, Master Magnets have established a working association with the Minerals Engineering Sections of the University of Birmingham Chemical Engineering Department. This link provides access to an extensive range of mineral processing facilities and additional expertise.



LABORATORY SCALE EQUIPMENT

The Master Magnets range of separation equipment can be manufactured and supplied to laboratory scale for small batch processing.

This allows clients to cost-effectively utilise the Master Magnets separation technologies, should they only be required for material testing purposes.

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



METAL DETECTORS AND VIBRATORY FEEDERS

To complement the range of magnetic separators, Master Magnets offers a full range of metal detectors and vibratory feeders.

For the transportation and feeding of materials, vibratory feeders can be supplied as single units or integrated into magnetic separators.

Where extremely high product purity is required, Master Magnets also offers a range of high sensitivity metal detectors as additional protection against metal contamination.



Master Magnets

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