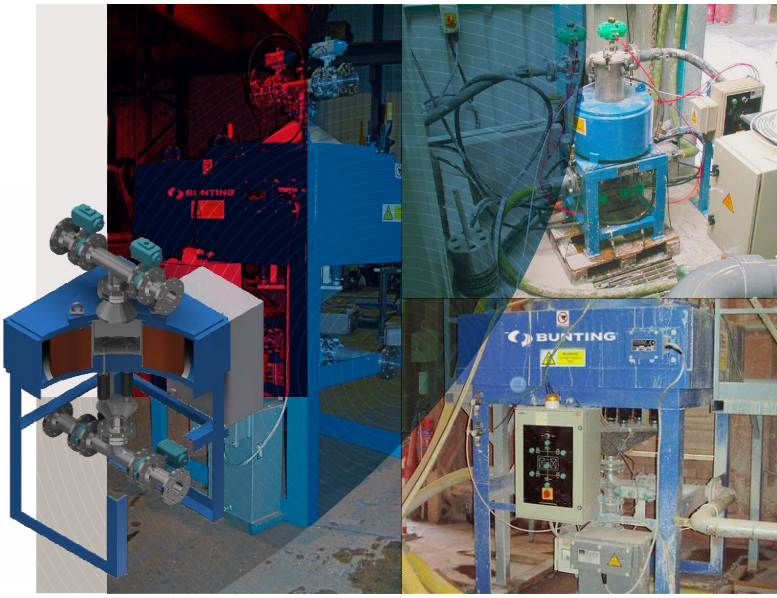
BUNTING

GLOBAL. MAGNETIC. FORCE.™

High Intensity Electro Magnetic Filters



The Bunting High Intensity Electromagnetic Filter is designed for the continuous removal of ferrous particles from many liquid based applications, particularly ceramic, slips and glazes and is designed to handle from 45 litres per minute to 900 litres per minute.

Filters are fitted with an auto backflush system on a timed cycle to enhance performance and to prevent clogging. This feature proves to be particularly successful where superior quality ceramics are required, outperforming competitor units.

The Filters enable companies to overcome the perennial problem faced by the ceramic industry of eliminating iron contamination in the glaze and slip processes, dramatically reducing structural and cosmetic defects in the manufactured product, resulting in costly rejects.

REQUIREMENT

Traditionally, heavy patterns disguised cosmetic defects but modern taste for delicate, fine patterns and plain backgrounds mean the ceramic industry is faced with finding effective solutions to contamination problems, or else reject a higher proportion of products.

Iron contamination can occur naturally from iron bearing minerals, such as Hematite, Chalcopyrite, Ilmenite and Biotite Micas which appear in many of the raw materials used for ceramics. Most of these minerals are removed during preparation, but some may pass to the fine grinding stage.

Introduced contamination is often the result of machinery wear when in contact with abrasive materials and this, together with oxidation, can lead to particles entering the product stream.

During the process of abrasion the particles harden and this can induce paramagnetism. The high intensity magnetic separator will remove a high percentage of paramagnetic particles.

OPERATION

The Bunting filter consists of a highly efficient computer designed coil, into which a canister containing a stainless steel matrix is inserted. The slurry is pumped through the matrix, which allows greater control of particle residence time. Magnetic contaminates are washed down through the matrix once the separator is de-energised.

The matrix amplifies the background magnetic field to produce points of very high magnetic intensity and gradient. A typical amplified field produced by the matrix is up to four times that of the background field (2,500 Gauss, 5,000 Gauss or 10,000 Gauss able to generate up to 40,000 Gauss).

Bunting High Intensity Electromagnetic Filters are supplied with a single inlet and outlet to and from the matrix. Product is fed to the separator at the bottom via a butterfly valve and passes up through the energised matrix. Removal of the captured magnetics inside an Electro Magnetic Filter is either undertaken manually or automatically. For automatic operations, the process is managed through a separate control which operates the 6 or 4 valve system (see fig.1).

To produce clean product

a) Energise magnet coil

b) Open valves 1 + 2

To discharge collected magnetic

a) Close valves 1 + 2

b) Open valves 3 + 4

c) Switch off magnet coil

d) Wash matrix through

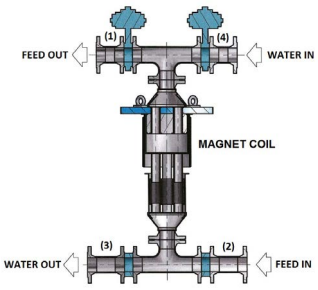


Fig. 1

The cleaning cycle time is adjustable on the control panel. If uninterrupted product flow is required, two filters installed in parallel and controlled automatically will give continuous flow.

Other products used within the ceramics industry include: pipeline magnetic filters, magnetic tubes and grates, plate magnets and suspension magnets.

We encourage potential clients to send us a representative sample of contaminated product for testing and evaluation in our fully equipped mineral processing laboratory.

X-RAY FLUORESCENCE ANALYSIS (XRF)

X-ray fluorescence (XRF) is the emission of characteristic secondary (or fluorescent) X-rays from a material that has been excited by being bombarded with high-energy X-rays or gamma rays. The phenomenon is widely used for elemental analysis and chemical analysis, particularly in the investigation of minerals, metals, glass, ceramics, and building materials.

At our Bunting – Redditch test facility we can provide comprehensive chemical analysis of metal, mineral and soil samples by identifying elements such as Mg, Al, Si, P, S, Fe. It is also capable of precious metal and rare earth element analysis. This enables our technicians to make detailed and accurate recommendations on magnetic separation requirements and propose process flowsheet options to the customer.

LABORATORY SAMPLE TESTING SERVICE

To arrive at the best separation criteria, Bunting uses a fully equipped laboratory for material testing to ensure optimum equipment selection. Customers are invited to submit samples for testing and evaluation, to ensure that separation performance can be measured, with all the results and process recommendations being submitted for the client's 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, Bunting have an established a working association with the Centre for Critical and Strategic Metals at the University of Birmingham. This link provides access to an extensive range of mineral processing and recycling facilities and additional expertise.

Bunting has over sixty 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 Bunting range of systems are known for their high performance and reliable operations.

Please visit our Website at www.bunting-redditch.com to view our full range of Equipment where brochure and video downloads are available.

For more information on our full range of products please contact us on the contact details below.

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