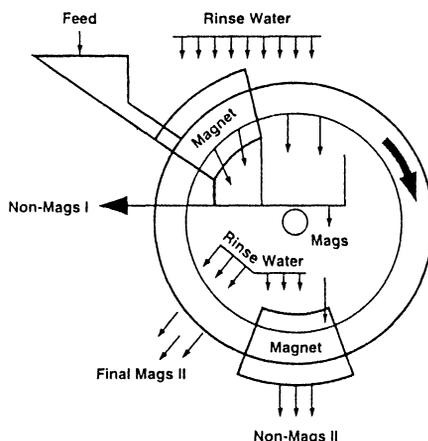


Equipment and Products

A NEW VERSION OF FERROUS WHEEL FOR ORE BENEFICIATION

A new version of Ferrous Wheel magnetic separator was introduced by Eriez Magnetics. The device uses high-strength permanent magnets so that the need for a magnetic coil, a heavy steel yoke and a cooling circuit has been eliminated. It also employs the well proven reverse flush of the matrix which eliminates the matrix blockage. Operating costs have been greatly reduced as the only utility requirement is the power for 5 HP drive that drives the wheel at 5 rpm. It is claimed that the separator can be used to beneficiate magnetite, hematite, ilmenite and assorted industrial minerals.



SEWAGE CLEANING BY MAGNETITE SEEDING

Magnetite seeding technique to remove sludge from sewage effluent has been applied at one of the Sydney's sewage treatment plants. Pulverized magnetite is mixed with the sewage, at pH below 6, while aluminium sulphates is added to facilitate coagulation of sludge particles with magnetite. A magnetic system is then used to induce magnetic flocculation of magnetite+sludge clusters. Once the sludge has settled, the clean water is drawn off and the sludge is pumped into a tank where by adding caustic soda the pH is increased to about pH10. The organic particles are thus released and magnetite is recovered in a magnetic separator. It has been observed that within 15 minutes this Sirofloc process can remove 85% of suspended solids and 90% of oils and grease, compared to over 10 hours required by conventional treatment. The water treated by the prototype plant is clean enough to be used for some industrial applications or to be discharged into the ocean.

FIXED PERMANENT MAGNETS FOR EQUIPMENT PROTECTION

Ets Raoul Lenoir (France) have introduced a new series of their fixed permanent magnets which, when installed upstream on loose bulk materials handling systems, protect such equipment as grinding mills and crushers by eliminating ferromagnetic contaminants. These fixed magnets are suitable for those applications where the concentration of tramp iron is low. They come in four versions depending on the height needed and the maximum distance between the belt and the magnet, 150, 200, 250 and 300 mm. The magnetic circuit is made up of ferrite magnets.

A TRIBOELECTROSTATIC SEPARATOR FROM CARPCO

Carpco Inc. has announced the introduction of a new triboelectrostatic separator V-Stat. The machine is designed to separate non-conductive materials based on surface charge differential which is generated by charging the particles by contact, heat or chemical treatment. The charged material is then fed between two opposing self-cleaning electrodes which attract the oppositely charged particles. The separator is suitable for particle sizes between 5 mm and 45 μm and can treat between 35–90 kg/hr/cm of electrode length (7–18 tonnes/hr for industrial models).

A NEW NdFeB MAGNETIC SEPARATOR

Researchers in Baotou Research Institute of Rare Earths (Inner Mongolia, China) have designed a new magnetic separator, tube-shaped CTBx400 in which a new pattern of a closed magnetic circuit is employed. The main circuit is composed of NdFeB permanent magnets and of magnetic medium, and the auxiliary circuit is composed of magnetic medium only. It is claimed that the circuit has a low loss of the magnetic flux and large radial field of 0.7 T on the surface and the peak value of 0.85 T. Trials showed that the separator has good mechanical performance and is easy to operate and to maintain. The separator is suitable for separation of pseudomorph and semi-pseudomorph hematite from hematite and has been installed at the beneficiation plant of the Baotou Steel and Rare Earth Co. The energy saving of 94% in comparison with electromagnetic separators has been achieved.