

Equipment and Products

MAGNETIC SEPARATORS TO TURKEY

Boxmag-Rapid has recently produced a number of small-scale versions of its machines for separation of magnetic minerals from ores. The small versions of the separator are being installed in university departments throughout Turkey. The order, worth over £150 000.00 covers 24 individual pieces of laboratory equipment, including magnetic separators and concentrators for use with wet and dry media, as well as electrostatic separators.

NEW DELIVERIES OF RARE-EARTH ROLL SEPARATORS

International Process Systems Inc. (USA) have recently delivered and commissioned several of their "high-force" separators. The roll magnetic system has a diameter of 100 mm and width of the magnetic zone 1500 mm. It is claimed that the capacity of these upgraded separators is about 2 times that of previous standard 72 to 75 mm diameter roll machines. A quadruple-module separator was recently delivered to a US company.

MANGANESE-ALUMINIUM MAGNETS

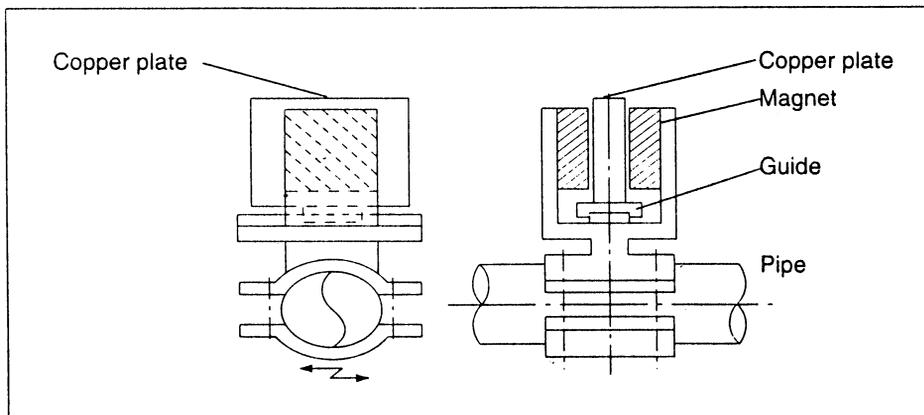
Sanyo Special Steel Co. Ltd. (Japan) started manufacturing and marketing manganese-aluminium magnets produced by the powder extrusion process in a joint venture with Matsushita Electronic Components Co. Ltd. in 1987. Recently, the Mn-Al magnets have been produced in the form of superthin magnetic plates with a minimum thickness of 0.15 mm, or in spherical form, which have expanded the range of applications of the Mn-Al magnets. These magnet lie between ferrite magnets and rare earth magnets in manufacturing costs and magnetic properties.

FLUORINE-DOPED MAGNETS

It has been known that by adding carbon or nitrogen to R_2Fe_{17} (R = rare earth) permanent magnet system, the magnetic anisotropy and Curie temperature can be improved. It has been recently theoretically shown that doping fluorine into these rare earth interstitial permanent magnets may also improve magnetic properties. This theory remains to be confirmed by experimental results of fluorinated rare earth permanent magnets.

VIBRATION ABSORBER USING MAGNETIC DAMPING

Ishikawajima-Harima Heavy Industries Co. Ltd. (Japan) have developed a new type of Houde damper (vibration absorber) that replaces conventional springs by the electromagnetic damping of a copper plate and a permanent magnet. The damper is effective even for large vibrations such as those caused by earthquakes. The new damper is about 150 mm long and 150 mm high. The copper plate is placed between a pair of magnets, and the copper plate moves about freely between the magnets. When vibrations are generated in piping, the magnets mounted on the piping are moved left and right by the vibrations, but the copper plate does not move. Eddy current is generated in the copper plate to suppress vibrations inside the piping. To generate a large damping force, a rare earth cobalt alloy magnets are used.



A NEW EDDY CURRENT SEPARATOR

Andrin, a French equipment manufacturer, has introduced an eddy current system for separating ferrous and non-ferrous metals from waste stream. The system uses Nd-Fe-B permanent magnets mounted on a rotating drum to generate a high-intensity alternating magnetic field. This produces eddy currents in the non-ferrous metals that repel them from the head roller into collecting bins. Ferrous metals remain on the roller and are scraped off at the bottom of its rotation. The conveyor belt speed, the rate of feed and the rotation of the polar wheel are adjustable.