

# MagRoll-Single Stage

## Application

Initially developed for the diamond industry the MagRoll has huge potential for use in other mineral processing industries. Many of these industries will already be using similar technology, but it is expected that the MagRoll will introduce a new dimension of performance to these industries as well as enabling some new, or hitherto unsuccessful, applications.

## Features and Specifications

- ◇ Fitted with De Beers' unique, high-strength 'SuperRoll', constructed of large diameter rare-earth (Neodymium-Iron-Boron) permanent magnets
- ◇ SuperRoll design optimised to suit application requirements using mathematical modelling techniques
- ◇ Material path fully enclosed and a dust extraction point provided for connection to an external extraction system
- ◇ Conveyor belt constructed of durable material and designed to be self-tracking as well as easy to adjust and replace
- ◇ Interchangeable magnetic rolls of different strengths to suit specific applications
- ◇ Available in 250mm and 500mm wide versions, each with optional features in terms of control philosophy and types of instrumentation



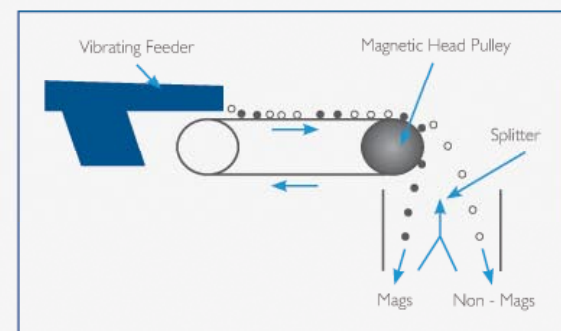
## Benefits

- ◇ Exceptionally strong magnetic forces generated by the SuperRoll, are ideally suited to difficult applications and enable more efficient separations at higher throughputs than conventional magnetic roll and drum separators
- ◇ Efficient separations achievable over a wide range of particle sizes from <1mm up to 25mm
- ◇ Material, which may be of high value, remains secure within the machine
- ◇ Dust is contained and may be easily extracted from the machine via a single connection. Dust build-up on the magnet which, over time, would cause loss of performance and belt tracking problems is minimised
- ◇ Long, trouble-free belt life resulting in minimal downtime and low maintenance costs
- ◇ The standard MagRoll frame may be fitted with a low strength Barium Ferrite 'scalping' roll to remove strongly magnetic particles prior to further treatment by a second MagRoll fitted with a SuperRoll
- ◇ Readily customised to suit exact user requirements



## Principle of operation:

A vibrating feeder draws material from a feed hopper and feeds it at a controlled rate onto a rotating conveyor belt, which passes over a magnetic head pulley. Non-magnetic material follows a trajectory, which is uninfluenced by the magnetic pulley's field, whereas magnetic material is drawn towards the pulley and discharges with a different trajectory. A collection hopper fitted with a variable splitter blade is positioned below the conveyor in order to collect the discharging material and to divide it into 'magnetics' and 'non-magnetics' streams.



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