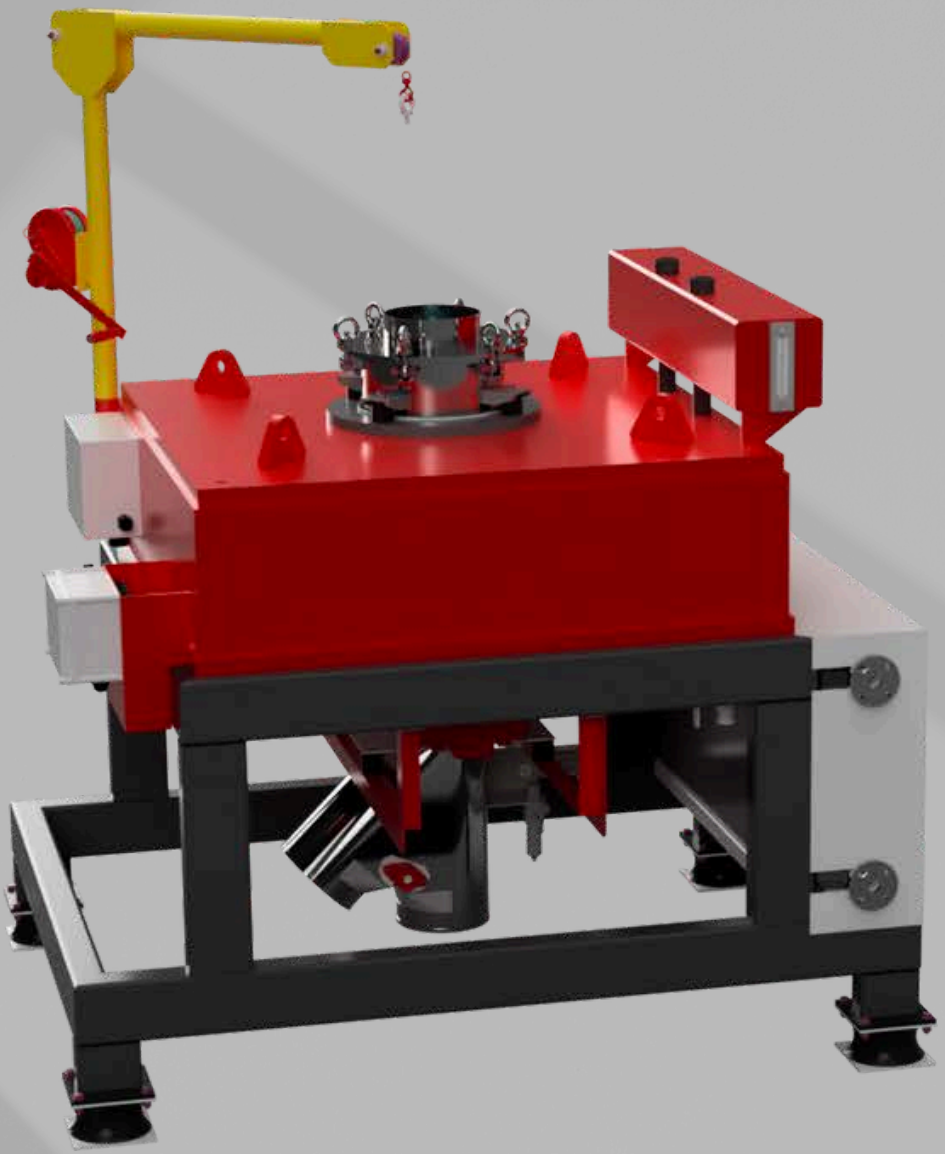
Precision Global Konex Ltd

# Dry Vibrating Magnetic Filters



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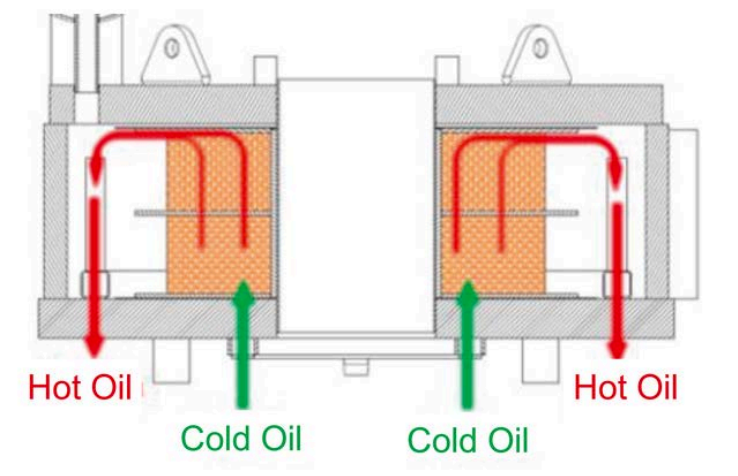
# DRY VIBRATING MAGNETIC FILTER

## PRODUCT SUMMARY

Designed to remove fine magnetic and paramagnetic contaminants from dry powders and granular materials. An advanced vibrating mechanism applies a product specific frequency/amplitude to the magnet matrix and product canister. This enhances material 'flowability', prevents clogging, and ensures your product is exposed to the high intensity magnetic capture zones.

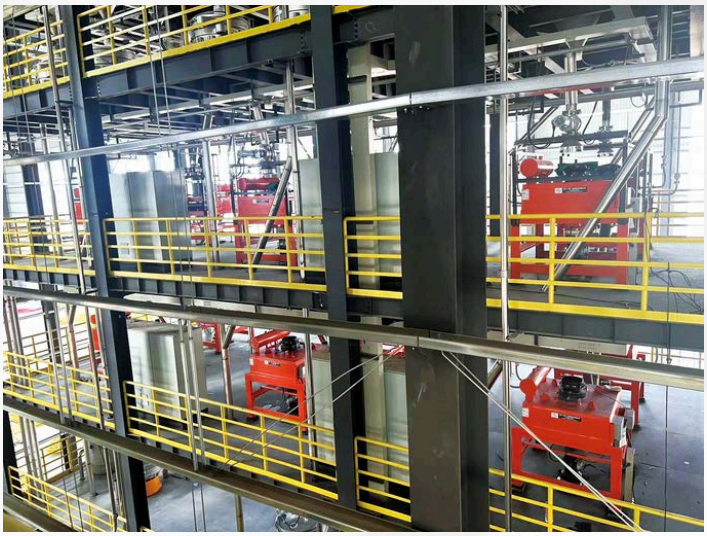
Controlled by custom designed PLC logic and hardware, the system automatically flushes out captured magnetics and continues to ensure your product meets the highest grades 24/7.

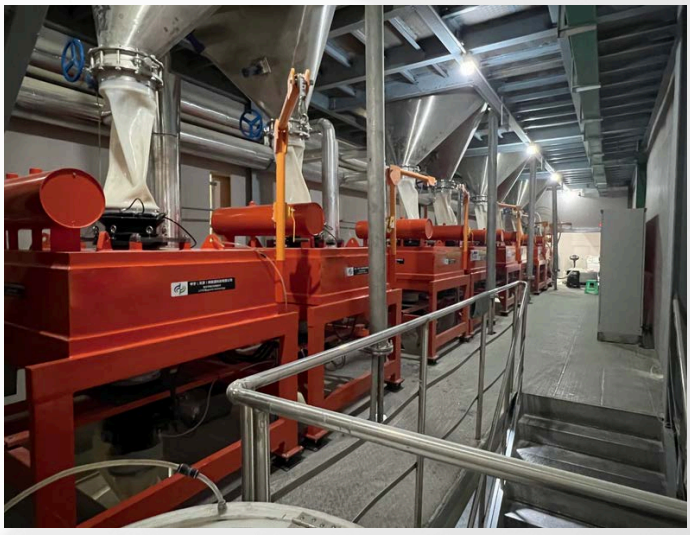



Unique coil cooling circuit

## APPLICATIONS

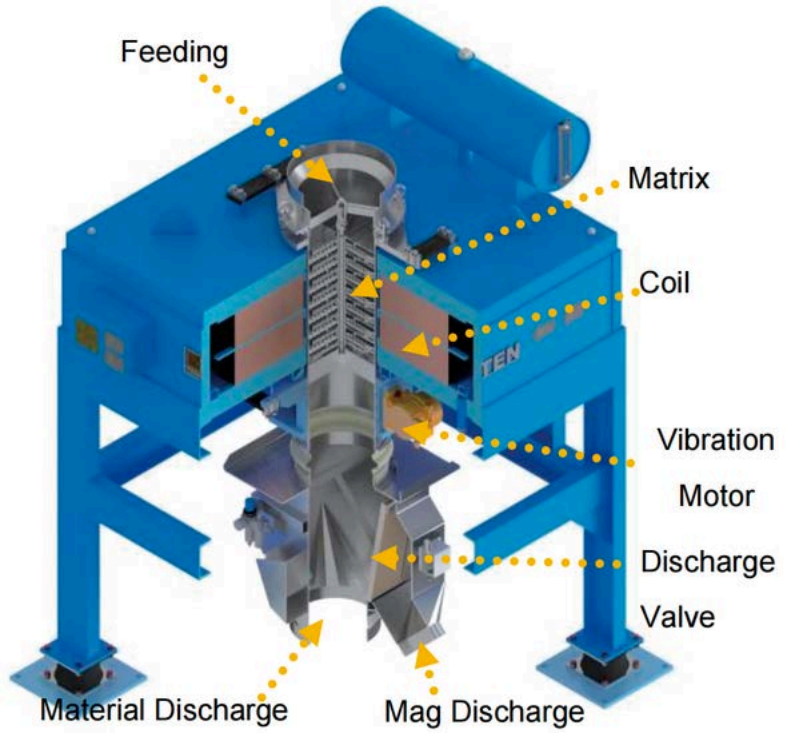
- Lithium
- Carbon
- Graphite
- Talc
- Silica
- Zircon powder
- Other difficult to convey dry powders



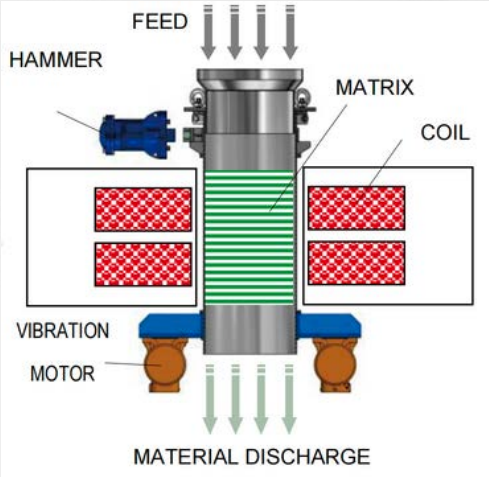


# DRY VIBRATING MAGNETIC FILTER

## OVERVIEW




Product flow is from top to bottom through the magnetic field in the canister containing the magnetic Matrix, Paramagnetic particles are effectively captured on the Matrix as non-magnetic material passes through. This process ensures efficient extraction of weakly magnetic impurities




As the Matrix becomes loaded with magnetic material and reaches saturation point, the feed is closed, Matrix demagnetised and the system is cleaned, effectively discharging the accumulated magnetic materials and restoring the Matrix capturing capacity.

To enhance processing efficiency, the canister is equipped with dual counter-rotating vibration motors. These motors generate high-frequency vertical vibrations, enabling smooth passage and dispersion of ultrafine materials.

Beneath the magnetic zone, a three-way diverter valve (controlled by a PLC system) automates magnetics and slag discharge, ensuring continuous and efficient cyclic operation.

Diverter valve

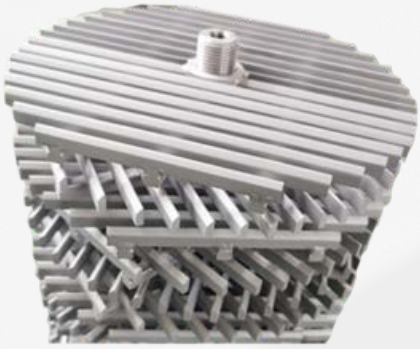
# DRY VIBRATING MAGNETIC FILTER

## MATRIX

The Matrix have many different configurations, specifically designed and selected for the customers product and recovery/grades required. Manufactured from corrosion resistant materials, it provides long service life and excellent magnetic permeability. The form of design provides very high magnetic gradients and amplifies the background magnetic Gauss.
It is engineered with a 22-layer structure, providing an extended magnetic separation zone with an effective height of 450 mm. This configuration offers a 25% increase in both the number of matrix layers and the magnetic field area compared to similar products on the market.

Honeycomb media

Diamond shaped media

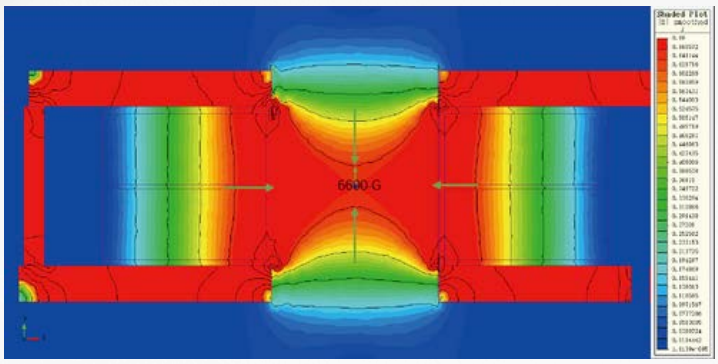


Strip/rod media

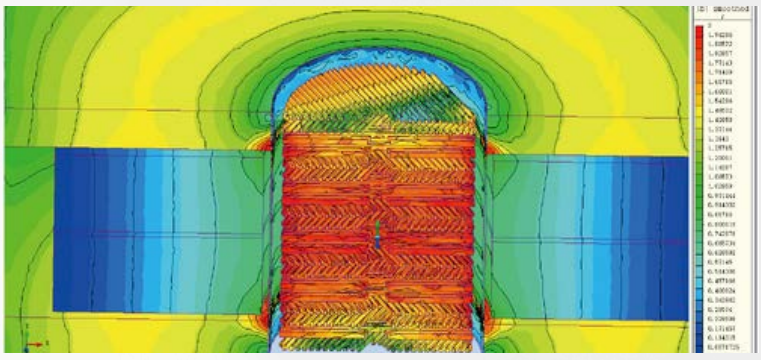
Diamond shaped media

## OPTIMISED MAGNETIC FIELD DESIGN

FEA analysis helps in optimizing the design, ensuring durability, and predicting operational efficiency before physical testing.




Mag-Field without Matrix



Mag-Field with Matrix

The equipment produces background field strength of 0-3500 or 0-5000 Gauss (Gauss range is subject to the model ordered).

Dry magnetic filter can achieve large flow capacity (300m3/h), ultra high core field strength design (core field strength 5 000 Gauss, working field strength 20 000 Gauss)

# DRY VIBRATING MAGNETIC FILTER

## KEY FEATURES AND BENEFITS

**High-Efficiency Filtration**
- Captures ultra-fine particles for optimal material purity using high field strength and focused magnetic designs

**Advanced Electromagnetic Technology**
- Ensures precise separation with minimal energy consumption.

**Constant Digital Control Magnetic Strength**
- Consistent and reliable automatic control of the magnetic force.
- (Many other alternatives can vary significantly through temperature variations, resulting in large inconsistencies)

**Low Maintenance & Durable Design**
- Built for continuous operation
- Designed by Engineers and Operators to ensure maintenance, spares, servicing and use is streamlined in all aspects

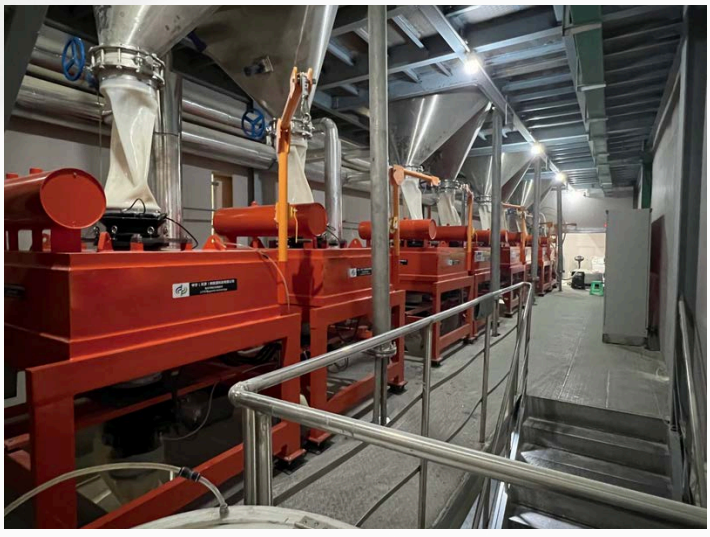
**Advanced (yet Simple) Operation**
- HMI Control Panel
- Plant control available
- Multiple user programable 'configurations' for quick recall and use
- Self cleaning continuous operation

**Customizable Solutions**
- Available in various sizes and configurations to suit specific process requirements.

**Factory Acceptance Testing (FAT)** before releasing from production on 100% of our products.

## DATA SHEET

| TYPE | WITH/WITHOUT MATRIX GAUSS DATA | MATRIX DIA (mm) | Reference Capacity (kg/h) | | | | | WEIGHT (kg) | POWER (kw) |
|---|---|---|---|---|---|---|---|---|---|
| | | | Ternary/ precursor | Lit- Ca | Lit- Hy | Graphite | Ferric pho | | |
| DN 150 | 3500/14000 Gauss | 150 | 150-300 | 150-350 | 200-450 | 150-300 | 150-300 | 2700 | 6.5 |
| DN 250 | | 250 | 450-600 | 500-650 | 600-800 | 450-650 | 450-600 | 3220 | 12 |
| DN 300 | | 300 | 600-800 | 650-1000 | 800-1200 | 650-1000 | 600-800 | 4010 | 14 |
| DN 400 | | 400 | 900-1200 | 1000-1500 | 1200-1650 | 1000-1500 | 900-1200 | 5250 | 16.5 |
| DN 150 | 5000/20000 Gauss | 150 | 150-300 | 150-350 | 200-450 | 150-300 | 150-300 | 3000 | 11.5 |
| DN 250 | | 250 | 450-600 | 500-650 | 600-800 | 450-650 | 450-600 | 3700 | 14.8 |
| DN 300 | | 300 | 600-800 | 650-1000 | 800-1200 | 650-1000 | 600-800 | 4385 | 21 |
| DN 400 | | 400 | 900-1200 | 1000-1500 | 1200-1650 | 1000-1500 | 900-1200 | 5550 | 24 |



## NOTES

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Document Version: v1.0
Revision Date: 2025/07/01
Status: Final