



# Mag-Clear®

## MAGNETIC SEPARATION

### Separators for ferrous and non-ferrous metals





# SEPARATION SYSTEMS

## Mag-Clear®

*Given the volatility of commodity prices, which in most cases tend to increase, it is in many cases necessary to detect the presence of metals and to separate them, whether for purposes of purification or recovery of waste, metals, minerals or plastics.*

Since 1982, Hindsbo Magneter designs and manufactures industrial magnetic systems. As a leader in metal detection and separation technologies, Hindsbo Magneter has developed a wide range of systems to meet the various needs of waste management and recycling industries.

### Systems designed specifically for your industry

In addition to a wide selection of standard systems, Hindsbo Magneter specialized itself in designing tailor-made solutions to your specific applications. Benefiting from a long experience in many different fields, our experts will develop for you separators that are both efficient and easy to integrate into your production lines.

From the most common systems such as magnetic drums or pulleys to overbelts and Eddy current separators for non-ferrous metals, Hindsbo Magneter is your one stop shop for metal detection and separation equipment. The combination of these systems often placed at different locations provides a better outcome for capturing metals. In some cases, these systems can also be used to protect your machines.

### Quality

In addition to its cross-sector expertise, Hindsbo Magneter is committed to providing the highest quality equipment, meeting and often exceeding the applicable standards. Apart from careful material selection and the type of permanent magnet that is to be used, all other design aspect including the finishing of these systems are considered of outmost importance.

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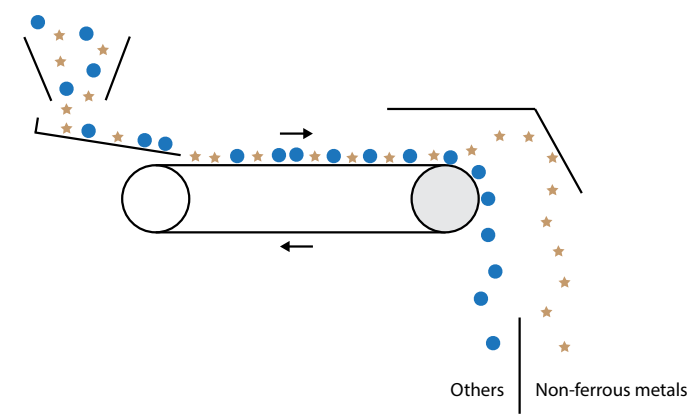
# EDDY CURRENT SEPARATORS



The Eddy current separator is a very efficient magnetic system for separating non ferrous metals (such as aluminum, copper, brass, etc.) from other inert materials (glass, stone, wood, etc.). This system is thus the preferred solution for many sectors such as waste management and recycling. Coupled with standard magnetic separator, ferrous metals, including that of small size, can also be separated, thus delivering optimal quality of separation.

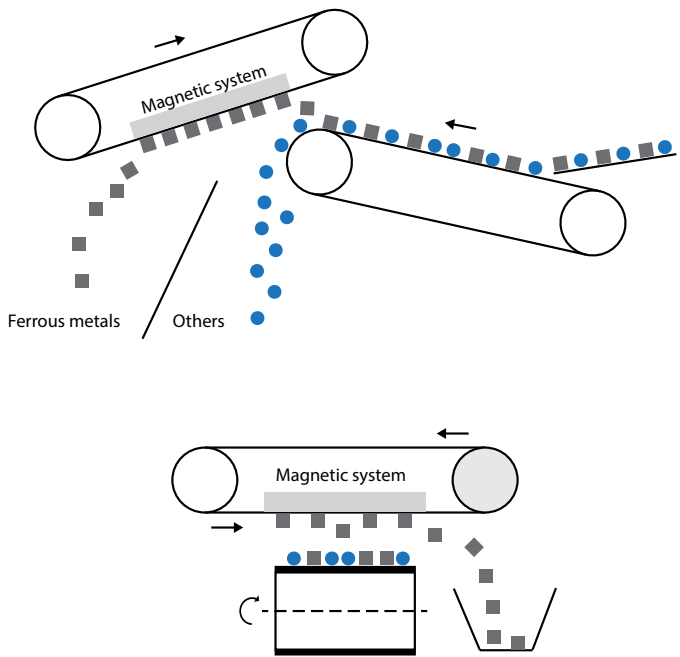
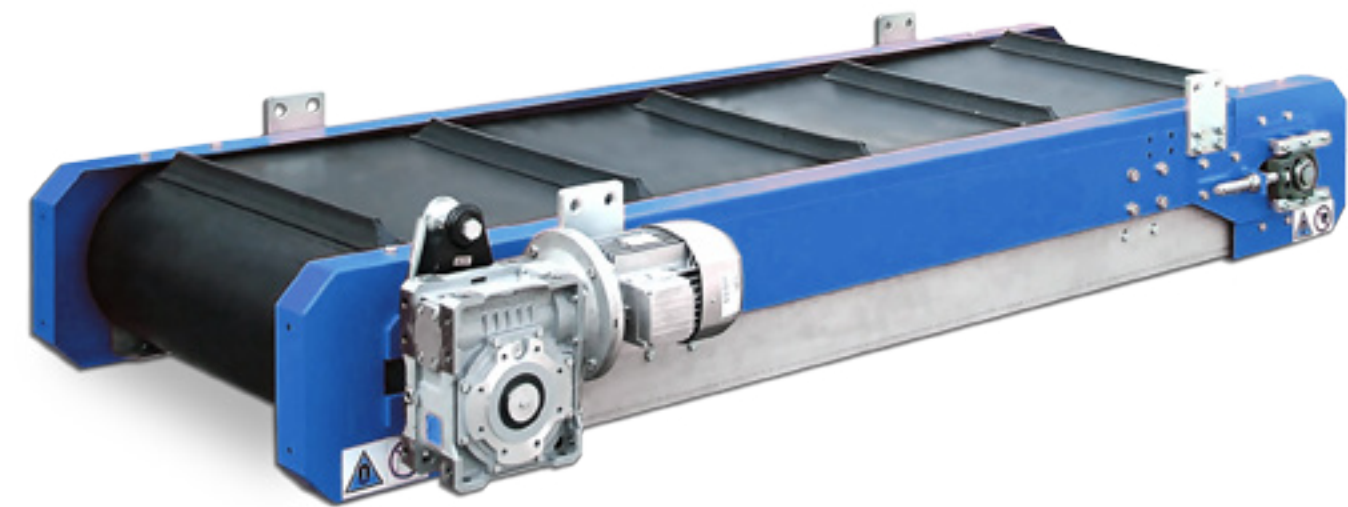
**How the separator works**

This system has a conveyor belt with a magnetic rotor at one end. This rotor, rotating very rapidly, generates a strong magnetic field. When the non-ferrous metal reaches the vicinity of the magnetic field, it is propelled to the outside of the machine, while the inert materials fall by gravity along the normal path in another container. Ferrous metals are themselves attracted by the strong magnetic field and unloaded below the separator, so as to be recovered.



*Upon request, BLS Magnet can design a tailor-made separator that meets the specific requirements of your installation.*

# MAGNETIC OVERBELTS



Magnetic overbelts can perform accurate and efficient separation of ferrous metals found in waste (glass, plastic, paper, wood, stone, coal, compost, etc..). These types of magnetic separators are widely used by many recyclers to increase the material value by making it free of impurities and also to protect the equipment against any damage that may be caused by metal objects initially present in the flow of material / product or waste.

**How the separator works**

Depending on your installation, overbelt separators can be installed transversely or longitudinally above the conveyor. The ferrous objects are attracted by the built-in magnetic system of the separator, then carried away by the rubber belt to a dropping zone where they can be retrieved. The high level of accuracy and efficiency of separation is made possible thanks to the power and depth of the magnetic field generated by our separators, designed specifically to meet your specific needs. Several models are available with ferrite or neodymium permanent magnets.

# OVERBELT - TIRE RECYCLING



Hindsbo Magneter recently introduced overbelt for tire recycling which can effectively separate ferrous particles present in shredded tires of cars and trucks. This system was developed in collaboration with one of the largest tire recyclers in Northern Italy.

### How the separator works

The metal particles consist essentially of twisted iron wires which are usually difficult to separate from the rubber. As the wires clog with the rubber, it is usually almost impossible to achieve the desired separation quality as it is likely to omit some residues. Initially, the only, yet costly, solution was to install two or more separators (overbelts and or magnetic drums).

### Innovative solution

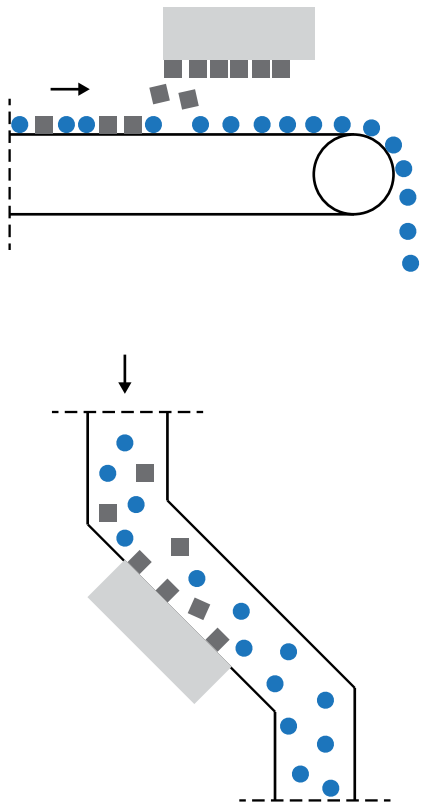
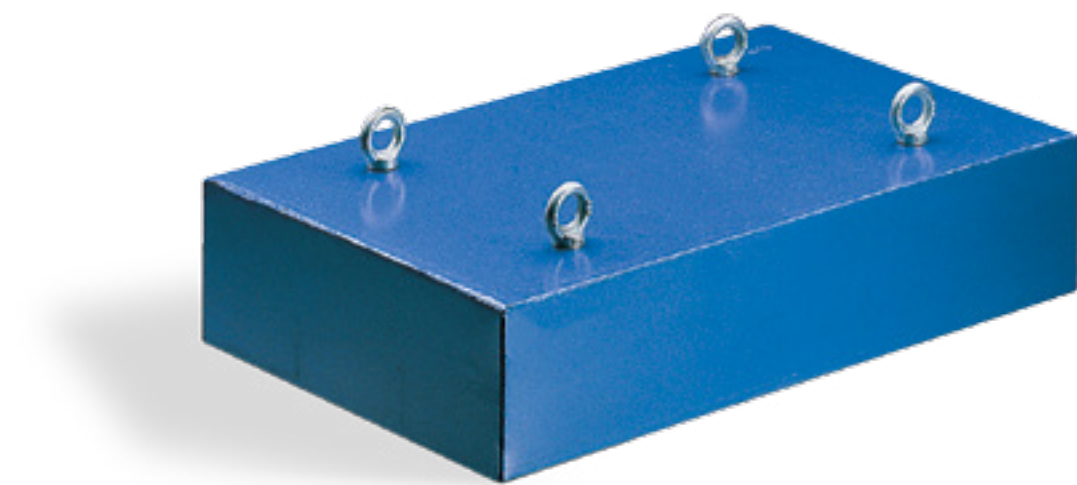
This separator, which is specifically designed for the recycling of tires offers a simple solution in one step. Thanks to its innovative concept, this separator delivers a separation efficiency higher than up to three conventional magnetic systems.

### Main advantages

- Increased separation quality in less time
- Higher purity of recovered iron and rubber
- Reduced investment (single separator) compared with the use of several separators
- Compact size.

This special overbelt must be positioned above a specific vibrating conveyor. The purity of the recovered product is above 99%.

# MAGNETIC PLATES

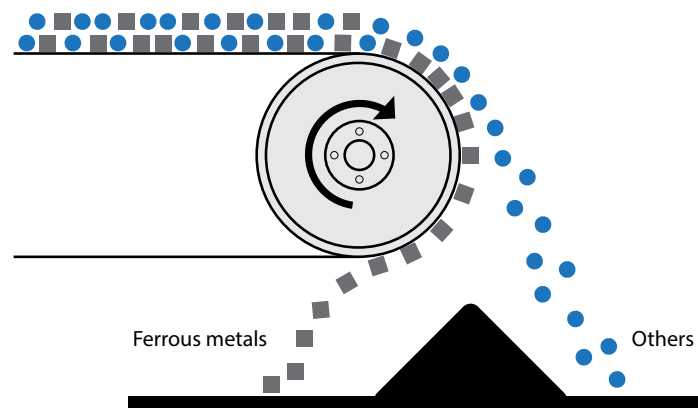


Available in two versions with ferrite or neodymium permanent magnets, magnetic plates are used primarily as protective systems for machines and other production processes. Depending on the model (ferrite or neodymium), magnetic plates can eliminate iron objects and dust of various sizes.

With their simple design, these systems are highly adaptable to any type of existing installation. These magnetic separators are recommended where only a small amount of iron must be separated. These magnetic plates are typically installed above the conveyor belts but may also be positioned in direct contact with the product flow.

These magnetic plates must be cleaned manually.

# MAGNETIC PULLEYS



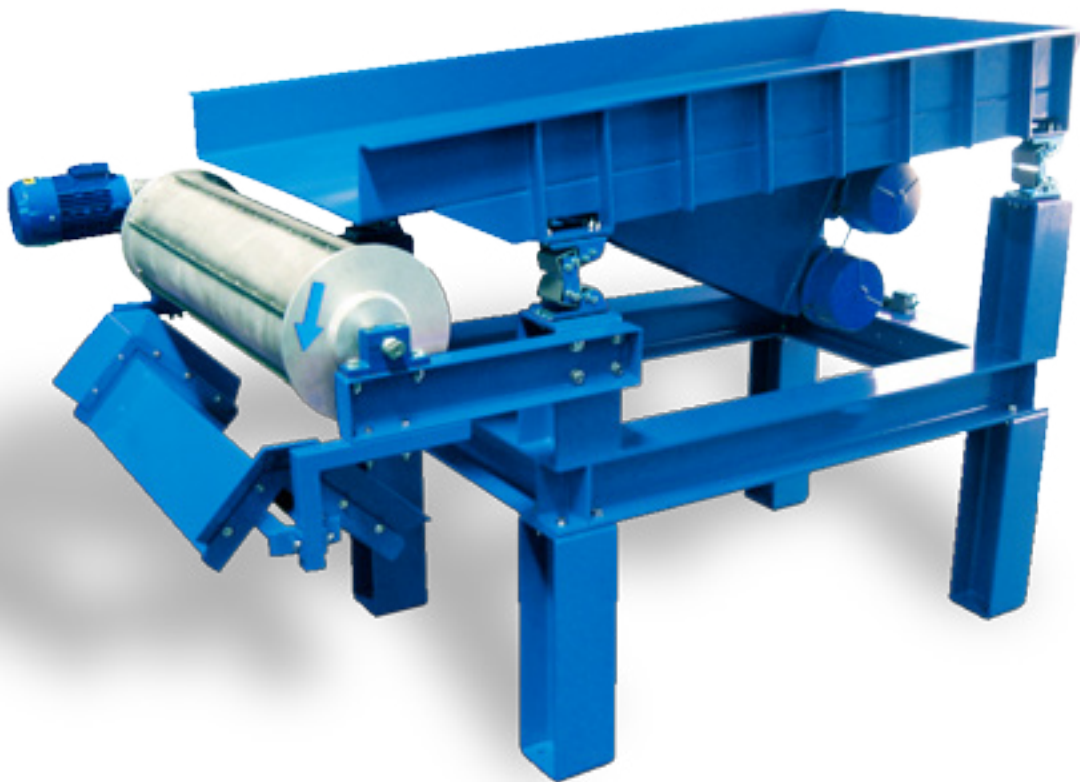
**Main advantages**

- Increased degree of iron removal
- Fine material purification
- Compact systems ideals for installations where conventional separators cannot be installed due to space limitations.

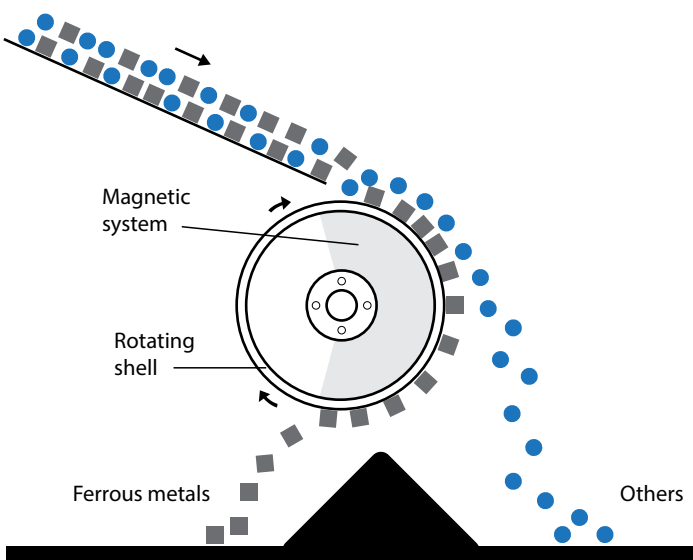
Permanent magnet magnetic pulleys can remove large amounts of iron slag, of small and medium size. These separators are equipped with a 360° magnetic surface, so that they can be installed as the drive rollers at the top of the conveyor belts. The iron particles are automatically dragged to an unloading zone for recovery.

The magnetic field generated by these magnetic pulleys is very strong and extends to about 50/100 mm from the surface, which eliminates even very small metal objects covered with a thick layer of inert material (waste or others).

# MAGNETIC DRUM SEPARATORS



Unlike magnetic pulleys that have a 360° magnetic surface, magnetic drums are equipped with a fixed magnetic system covering approximately two thirds of the cylinder which has a rotating shell (see explanatory diagram). The iron particles are then dragged to an unloading zone for recovery while waste falls by gravity.





# APPLICATIONS

Since the early 1950s, the volume of waste (household, etc.) contin-ues to grow at a rate that seems out of control. Hindsbo Magneter provides the recycling industry, which has now become one of the pillars of sustainable development, with a wide range of systems designed for a variety of applications across many industries.

## GLASS



Practically 100% recyclable indefinitely, glass is an inert material widely used as packaging for its purity. Despite recent efforts in waste sorting, magnetic separation remains an essential part for the recycling of glass.

## PLASTIC



The use of plastic has been multiplied by 20 in 50 years and some consumer products contain over 20 different plastic resins. Recycling of plastic has thus become of outmost importance in terms of sustainable development. Magnetic separators are used to remove all ferrous impurities.

## METALS



Magnetic separation is now one of the most effective ways of sorting ferrous and non-ferrous metals (mainly steel and aluminum) which are also indefinitely 100% recyclable. The recovery of these metals depends largely on the quality of magnetic sorting.

## OTHERS



Magnetic separation systems are used for many other applications and various products such as textile, organic wood and other compounds.

“ *Hindsbo Magneter is a specialist of industry-specific magnetic separation systems* ”

## MINERALS



Mainly produced in the construction sector, mineral waste accounts for the largest part of waste globally. Magnetic separation helps converting this gigantic source of waste into reusable materials.

# SPECIFICATION OF YOUR NEED

Characteristics of the contaminated product:

- ☐ Product:
- ☐ Density:
- ☐ Particle size:
- ☐ Particle shape:
- ☐ Flow:
- ☐ Grading:
- ☐ Humidity:
- ☐ Temperature :
- ☐ Sample : Yes / No

Characteristics of the pollutant:

- ☐ Product:
- ☐ Density:
- ☐ Particle size:
- ☐ Particle shape:
- ☐ Flow:
- ☐ Humidity:
- ☐ Temperature :
- ☐ Pollution percentage:

Type of installation :

- ☐ Type of conveyor:
- ☐ Width of conveyor / diameter of pipe:
- ☐ Width of material flow:
- ☐ Speed:
- ☐ Installation angle:
- ☐ Product flow thickness:
- ☐ Belt material:
- ☐ Dimensions/diameter:
- ☐ Speed of fall:
- ☐ Pressure (if pneumatic transport):

Other details:

- ☐ Additionnal information:

Distributor:

Herslevvej 43

4000 Roskilde

Phone: +45 46351788

[hindsbo@magneter.dk](mailto:hindsbo@magneter.dk)  
[www.magneter.dk](http://www.magneter.dk)

