



## **STEINERT NES**

### **Non-Ferrous Metal Separator**

> Shredder material, Municipal waste, WTE bottom ash, Foundry sand, Glass, Elektronik scrap, Wood, Chips, Batteries

# The STEINERT Principle

Test the principle of the non-ferrous separator for yourself. Visit our Test Centre and bring your material with you. Come and see the technology of the non-ferrous separator – live and on site. The patented, eccentric magnetic pole system is what makes the difference. Thanks to the magnetic pole system mounted eccentrically in the head drum of the STEINERT non-ferrous separators, the effect of the changing magnetic fields is concentrated exactly on an area within which the material is most effectively subject to the forces.



# STEINERT NES

## Non-Ferrous Metal Separator

The mechanical recovery of non-ferrous metals is the economic basis of all recycling – and the STEINERT NES with Eccentric Pole System fulfils the associated requirements perfectly! High yield and long life are the qualities. That make for assured, long-term operating result. The non-ferrous metal separator can be used wherever non-ferrous metals have to be recovered or separated, e.g. where shredder material, municipal waste, WTE bottom ash, electronic scrap, wood chips, glass, batteries or foundry sand are processed.

## Application

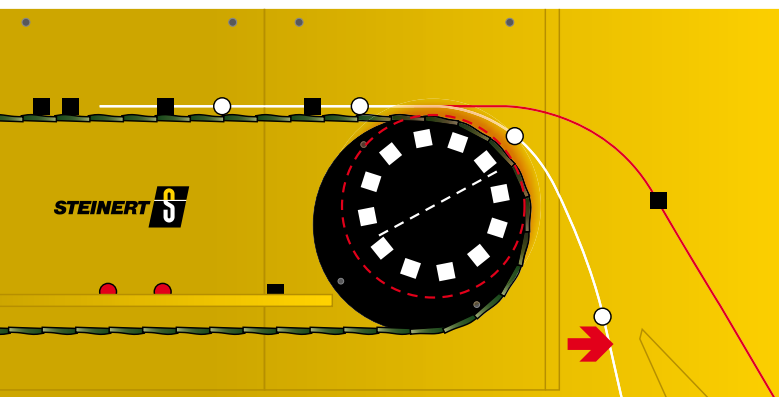
**Shredder material:** Light and heavy shredder fractions contain substantial non-ferrous metals. Up to five percent non-ferrous metals are contained in the light fraction – valuable materials which, even today, often end up in the landfill. The heavy fraction is dry-processed to recover clean, saleable non-ferrous metals after screening and magnetic separation. Thanks to the use of density sorting, the non-ferrous metals separator produces a clean aluminium concentrate.

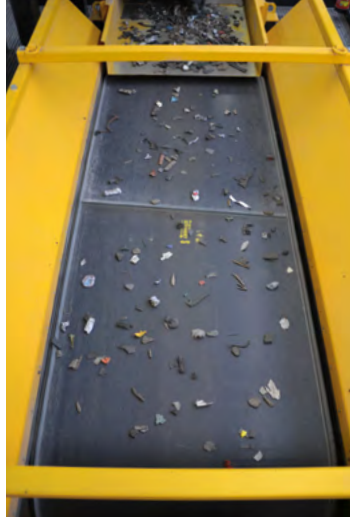
**Refuse processing:** Non-ferrous metal separators are used to recover metal packaging from municipal waste. Other areas of application include compost, glass, and paper processing and the recycling of WTE bottom ash – for both the maximum recovery of valuable metals and for metal-free products.

**Other potential applications:** Metal-free scrap wood is becoming more important as an alternative fuel and a raw material for the derived timber products industry. The STEINERT non-ferrous metal separator also demonstrates especially high capabilities in the processing of electronic scrap, cables, printed-circuit boards and foundry sands. Even finely divided non-ferrous metals with grain sizes down to 1 mm can be separated thanks to the eccentric system.

**Principle:** A non-ferrous metal separator basically consists of a short conveyor driven from the feed end. A rapidly rotating system of permanent magnets – the pole system – which generates high-frequency changing magnetic fields, is incorporated in the head drum. These fields create strong eddy currents in the non-ferrous metal parts, in which their own magnetic fields, opposing the external fields, now build up. The NF-metal parts jump out of the remaining material flow. STEINERT's patented eccentric pole system guarantees the maximum efficiency in this process, delivering top-quality separation and longterm operation!

The patented, eccentric magnetic pole system! Thanks to





the magnetic pole system mounted eccentrically in the head drum of the STEINERT non-ferrous separators, the effect of the changing magnetic fields is concentrated exactly on an area within which the material is most effectively subject to the forces. The pole system can be adjusted so that this position can be changed in order to have the maximum effect on the discharge parabola, and so to further amplify the effect of the forces.

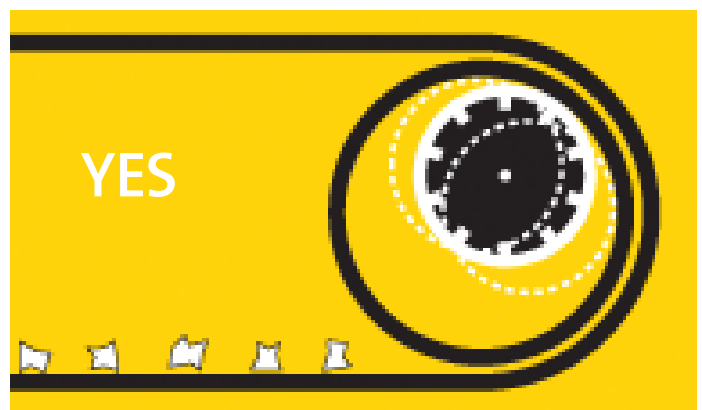
In the concentric pole systems offered by our competitors, the effect of the magnetic field is frequently felt too early, with the consequence that the non-ferrous metals are prematurely ejected from the magnetic field, thus resulting in their not being adequately deflected. The eccentric pole system, in contrast, ensures that the influence of the magnetic field is only at a maximum at the moment of separation, and that no magnetic field is generated at other positions on the belt drum. Residual ferrous metals cannot adhere to the head drum, which means that wear on the belt and the self cleaning drum shell are reduced to an absolute minimum – another important difference from the concentric system.

STEINERT achieves its extraordinary separation results thanks to the use of neodymium-iron-boron magnets, a thin conveyor belt and an electrically non-conductive drum body made from fibre-reinforced composite materials. Together, these features ensure maximum field strength and exact, efficient separation. The eccentric pole system is also protected by a sealed cover of stainless steel.

Normally, the bulk density increases with decreasing parti-

cle sizes. This increases the importance of the mass throughput. For coarse and light materials, the working width is determined by the volume-related throughput.

Deep, medium-frequency fields are required for these types of material. Fine grained material requires less extensive, but higher frequency fields. All these are available in STEINERT's patented eccentric design.



# The Models

STEINERT offers by far the widest range of non-ferrous metal separators. This guarantees finding the most cost-effective solution for every application! The wide range of models is based on three series of units with special magnetic pole systems and working widths ranging from 500 to 2500 mm (16" - 80").

**The Standard Series 50** functions with medium grain sizes – larger than 5 mm – and with high throughputs. The selectivity is high and additionally offers the plant operator security in case of variations in throughput and materials – smaller packaging and composite materials can be reliably recovered.

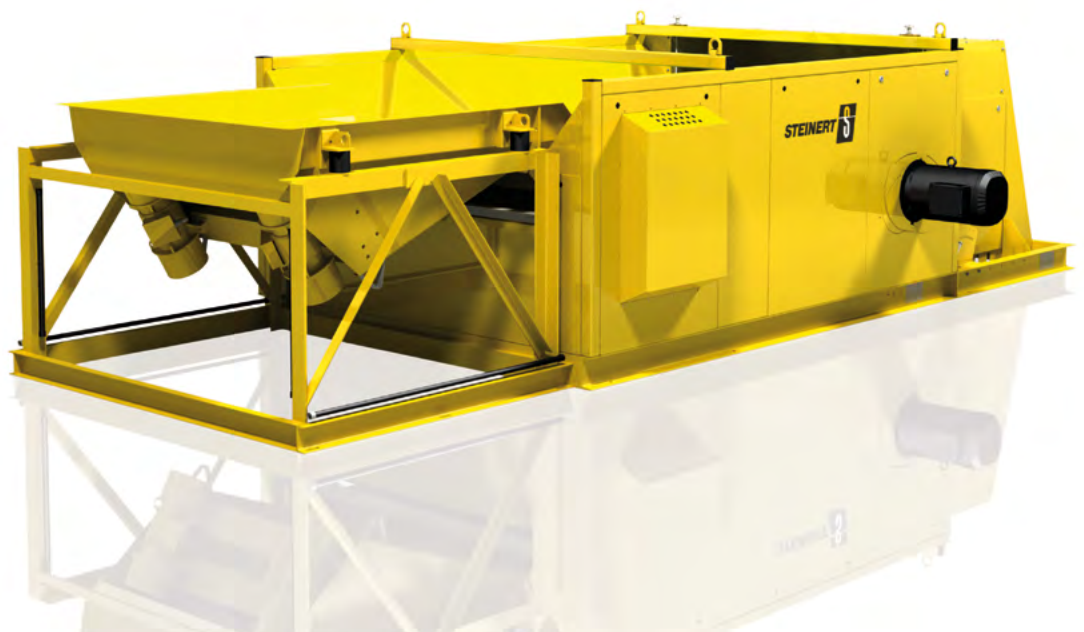
**The Series 61** is optimally used with particle sizes of 1 to 20 mm. It ensures the highest yields of metals, from fine materials usually considered inseparable. Typical applications include the fine fraction of shredder waste, municipal waste, WTE bottom ash or old foundry sands from the aluminium industry.

To ensure maximum cost-benefit ratio, STEINERT also offers special belts, discharge arrangements and control specially designed for the respective applications. The optional rotary

splitter, for example, improves the discharge of long, stringy materials. The different control make it possible to link the unit to a central plant control.

STEINERT engineers have developed tried and tested special solutions in intensive cooperation with customers. For example, the "pre-head" discharge is used to improve the dry sorting of non-ferrous heavy metals and aluminium. This involves reversing the direction of rotation of the magnetic pole system. The separation immediately occurs after the vertex of the head drum. Compact, spherical parts caused to rotate by the magnetic pole beneath the pole drum. Flat or wire-shaped parts, in contrast, are discharged in the belt direction of travel.

Our R&D department is glad to conduct tests of your material.



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Your local STEINERT consultant: