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## Magnet for charge make-up and scrap handling

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### Fine control of magnetic field for scrap composition

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Magnets are an indispensable part of today's scrap-handling processes. TRUNINGER has always been particularly innovative in scrap magnet applications. For example, the world's first scrap magnet with aluminum coils was developed by TRUNINGER.

With a combination of optimum magnet design and sophisticated control technology, we can offer our customers a gripper system with precision control.

Precise charge make-up is a prerequisite for the fast and reliable preparation of melting material needed in the foundry. The scrap mix is necessary in order to achieve an optimised chemical composition for possible subsequent casting material.



*Figure 1: Picking of a pre-determined weight of ingots*

The "recipe" includes various types of scrap, pig iron and recycled material. The material is unmixed and provided in individual boxes.

Each required ingredient is transmitted to the crane/magnet system via a master controller. The load is picked up and excess pieces are separated from the magnet by precise adjustment of the magnetic field. This order picking process can be done to very tight tolerances and can be defined by the user. The high precision in the load mix guarantees the desired properties of the casting material by combining low cost raw material with a minimum amount of expensive supplementary alloys.

## **An optimal magnet system for every application**

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The round magnet, as the actual "original magnet" for scrap handling, has been used many thousands of times all over the world and now a new model is available from TRUNINGER. Nowadays, modern computerised tools allow an optimal design of the magnet geometry. These calculations result in a smaller weight and higher load capacity with lower power consumption and an increased air gap tolerance.

There are essentially two series of scrap magnets available:

- "MillMaster" for heavy duty work in steel mills or scrap yards
- "LiteMaster" for mobile applications

It is possible to manufacture magnets up to 2500 mm in diameter.



*Figure 2: Fast and efficient rail car unloading at a steel mill*

## Robust, efficient, reliable

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- The magnet is constructed from a welded steel housing. Unlike the usual cast housings on the market, this is completely abrasion-resistant and shock-proof.
- The magnetic permeability of steel is also approximately 30% better than that of cast iron. This gives the magnet exceptional performance and value for money.



*Figure 3: Deep magnetic field even with low material density*

### Advantages

- Automatic charge make-up through computer control
- Easy operation via cabin or radio remote control
- Deep magnetic field for maximum lifting capacity
- Backup battery power supply for optimal safety
- Option for redundant power supply to the magnet

### Your benefits

- Higher availability
- Better handling volume
- Increased reliability in scrap handling
- Longer service life