



## Suspension Magnets

- > Mining, bulk materials handling, port loading, scrap metal and waste recycling
- > Protects equipment and decontaminates product

# Suspension Magnets

Thousands of STEINERT suspension magnets are used in the mining and resources industries. STEINERT's motto is "a creative solution for every need". This not only refers to our range of products, but also our extensive service to your investment. We offer sustainable solutions which guarantee permanent advantages in the long run!

## APPLICATIONS

### Mining, Bulk Materials Handling & Port Loading

- > Remove ferrous metal (tramp iron) from product to protect equipment such as conveyors, chutes, crushers and other sizing equipment
- > Remove ferrous tramp metal to decontaminate product

### Environmental

- > Recover ferrous fraction for scrap metal recycling
- > Removal of ferrous tramp metal from waste recycling to protect equipment as well as to decontaminate product

## OPTIONS

- > Permanent magnets
- > Electromagnets (oil-cooled or air-cooled)
- > Self-cleaning
- > Stationary or manual cleaning

## SIZING & SELECTION

Some of the major factors that influence the sizing and selection of suspension magnets are:

- > Minimum size of ferrous to be removed
- > Shape of ferrous to be separated
- > Magnet position – over-belt or over-pulley/discharge
- > Belt width
- > Belt speed
- > Product bulk density
- > Product burden depth
- > Maximum lump size

## TECHNOLOGY

Suspension magnets are usually mounted at a fixed working distance above a conventional conveyor belt. Ferrous metal in the material conveyed is attracted by the magnet and magnetically removed from the material flow.

STEINERT suspension magnets may work up to 3000mm belt width and up to 900mm suspension height. The wide range of products offers the chance to find the right solution for your needs. The well proven and dense coil design with aluminium strip allows a constant, efficient cooling and thereby reduces the risk of coil burn-outs. The design enables maximum coil turns and a compact unit even when offered as a self-cleaning magnet. No external expansion tank is needed.



# Magnet Sizing & Selection

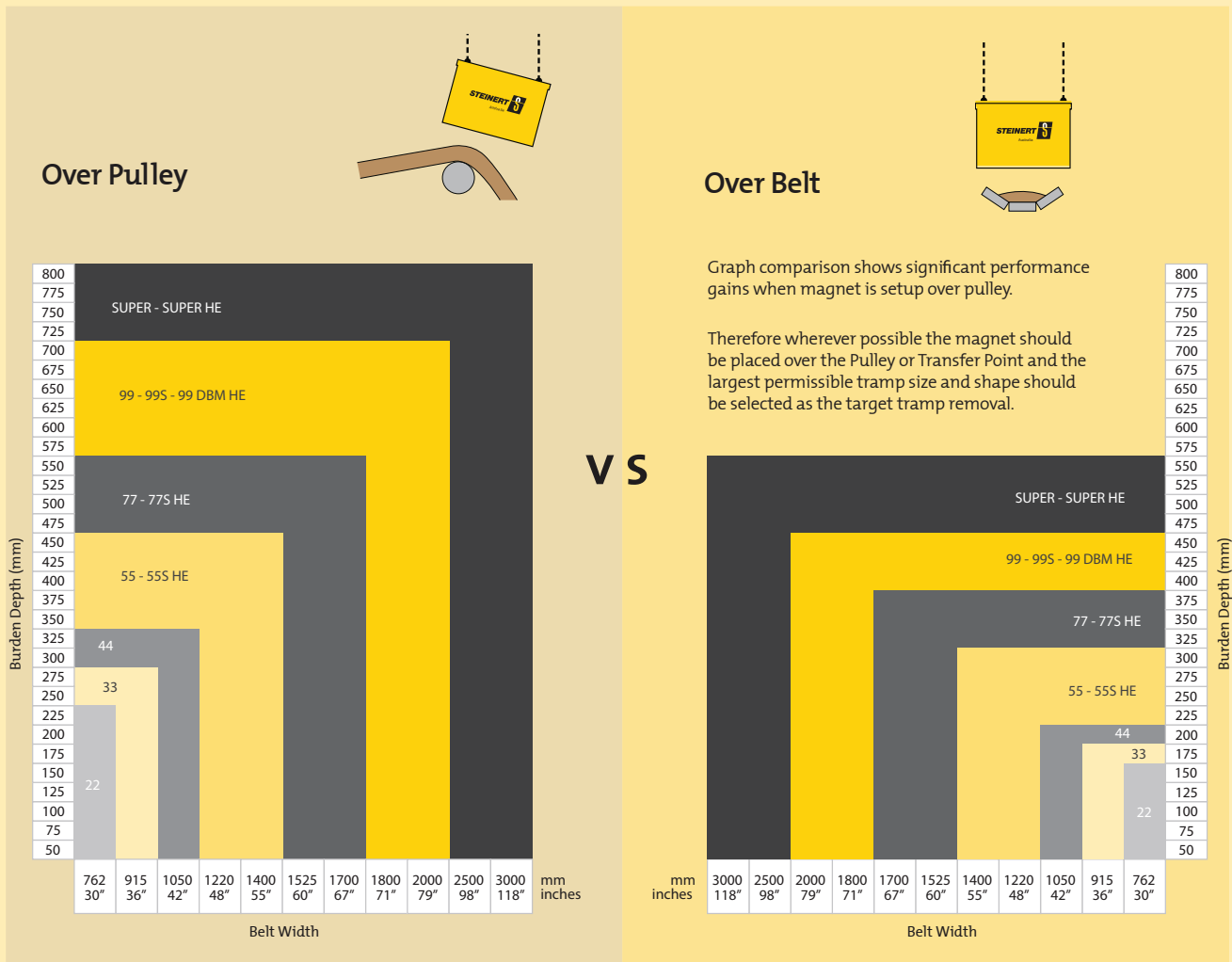
Magnets are selected according to the belt's widths that they cover, but the main factor that determines the magnet selection is the amount of Force Index (Gauss<sup>2</sup>/mm) that is required to remove a target size and shape of tramp from a burden of product material travelling at a certain belt speed.

**Tramp Size** The smaller the tramp metal the more difficult it is to remove. Therefore a larger, heavier, more powerful and more expensive magnet is required.

**Tramp Shape** Rods and plates are relatively easy to remove as they are easily orientated north-south and present a larger surface area to the magnet. Nuts, cubes and spheres are very difficult to remove and are often unnecessarily specified especially when the main purpose of the magnet is to protect the belt.



**Magnet Position** It is far easier to remove tramp in the Over Pulley position as this takes advantage of the natural breakup of the material as it leaves the head pulley.



Example: The Force Index to remove an M18 x 100mm Bolt and an M18 Nut from 300mm of Coal burden travelling at a belt speed of 3m/s is as follows:	OVER PULLEY	OVER BELT	TRAMP METAL SHAPE
	1,457 GAUSS <sup>2</sup> /MM	7,441 GAUSS <sup>2</sup> /MM	M18 X 100MM BOLT
	3,189 GAUSS <sup>2</sup> /MM	25,984 GAUSS <sup>2</sup> /MM	M18 NUT

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