Dings magnetic group
co.

Represented by:
Rate Technology Systems Ltd.

OVERHEAD MAGNETS

120-YEARS OF EXPERIENCE

APPLYING THE PROPER MAGNET FOR YOUR APPLICATION

20-YEAR WARRANTY
against coil burn-out on
Electromagnets

LIFETIME GUARANTEE
on magnetism for
Permanent Magnets

RECYCLING | COAL/POWER PLANTS | QUARRY/AGGREGATE | LUMBER/WOOD/BIOMASS

AUTOMOTIVE & WHITE GOODS | FOUNDRY | STEEL/SLAG PROCESSING | MINING/MINERALS

THE DINGS® COMPANY MAGNETIC GROUP

For the past 120 years, Dings® Company Magnetic Group has been providing metal separation solutions to companies around the world. Dings® manufactures a complete line of Overhead Electromagnets and Permanent Magnets specifically designed to handle the most challenging applications. Our magnets ensure product purity and equipment protection by effectively recovering ferrous metals from the product stream. If metal remains in the product stream, it can lead to costly repairs and downtime.

DINGS® HISTORY

In 1899, Myron Dings developed an advanced type of magnetic separator during his employment at Allis-Chalmers. When he couldn't get his employer interested in manufacturing it, he founded his own company and named it Dings Magnetic Separator Co.

Today, 120 years later, Dings® Company Magnetic Group is still being recognized worldwide as a leading manufacturer of industrial magnets.

- **Magnetic experts trusted for over 120 years**
- **Achieving customer's goals with cost-effective solutions**
- **Optimum magnetic and equipment protection**
- **Engineered and Manufactured in Milwaukee, Wisconsin - USA**
- **Designed to provide long-lasting performance**

INDUSTRIES WE SERVE

Dings® Company Magnetic Group Overhead Magnets are used in a wide variety of industries such as: Aggregate, Construction/Demolition, Mining/ Minerals, Foundry, Steel/Slag Processing, Coal/Power Plants, Recycling, Automotive and many more.

THE DINGS® MAGNETIC DIFFERENCE

20-YEAR WARRANTY
against coil burnout

Dings® Electromagnet coils are wound with an anodized aluminum strap which does not require adding additional electrical insulation. The anodizing exceeds a Class "H" insulation rating. The coils are mounted using non-deteriorating glastic spacers. Each turn of the coils is exposed to the cooling oil eliminating coil hot spots. These features support our 20-Year Warranty against coil burnout - the best in the industry!

LIFETIME WARRANTY
on magnetism

Dings® Overhead Permanent Magnets are designed and manufactured with a Dings® Flux Control (DFC) circuit design. DFC eliminates internal leakage between magnetic poles. This design improves the performance with ultimate magnetic power and ensures a longer-lasting magnet. Our DFC circuit design helps in backing the Lifetime Warranty Guarantee on magnetism.

DINGS® OVERHEAD ELECTROMAGNETS

Overhead Electromagnets are suspended over conveyor belts and vibratory feeders. They are designed to magnetically lift ferrous metals out of bulk material which ensures product purity and protects processing equipment. Any ferrous metal that is attracted to the magnet face is either automatically and continuously removed with our self-cleaning models or held in place on stationary models until the magnet is turned off. Our Overhead Electromagnets remove damaging ferrous tramp metal, which can cause costly repairs and downtime. All overhead electromagnets require a DC power supply. Dings® offers a maintenance-free rectifier for each of our magnet sizes.

Self-Cleaning

- 20 year warranty against coil burnout
- Expansion of the high dielectric strength cooling oil takes place inside the magnet box
- Additional wear plate to provide extra protection for the magnet impact area
- CSA approved models
- Hazardous location models
- IP56 AGMA Class II drive gearmotor
- Heavy-duty belt
- Hazardous location rated models

Stationary

- 20 year warranty against coil burnout
- Expansion of the high dielectric strength cooling oil takes place inside the magnet box
- Additional wear plate to provide extra protection for the magnet impact area
- CSA approved models
- Hazardous location models
- Easy to install

Severe Duty

- 20 year warranty against coil burnout
- Expansion of the high dielectric strength cooling oil takes place inside the magnet box
- Additional wear plate to provide extra protection for the magnet impact area
- CSA approved models
- Heavy-duty drive package
- Armor clad "Durabelt"
- Lagging on the drive pulley
- IP56 AGMA Class II drive gear motor

Self-Cleaning models have a belt that continuously travels across the face of the magnet body to automatically discharge attracted ferrous metal away from the magnetic zone. These powerful models come equipped with a heavy-duty rubber belt to remove ferrous metal from the material stream. Other cleat styles and sizes are available for use in different ferrous recovery applications. To drive the magnetic belt, a direct drive gear motor is used and available in special voltages.

Stationary models are maintenance-free with no moving parts (no lubrication, no tightening or replacing of hardware needed). Ferrous metal is pulled out of the material stream to the face of the magnet and is held in place until the magnet is turned off. Designed for easy installation, this model comes with a 3-point suspension system (4-point suspension system available) that includes two steel cables and one turnbuckle connected to a common bull ring. Adjustment of the magnet suspension angle is easy and only involves adjusting the turnbuckle (no measuring, shortening, lengthening or cutting of cable). These magnets are constructed with a stainless steel bottom and wear plate.

Severe Duty models are a tough, rugged version of our self-cleaning electromagnet. They are specifically designed for severe duty applications such as concrete recycling (recovering long rods and rebar), construction, demolition and applications that have frequent impact from large quantities of ferrous. These models are built to withstand the harshest conditions. These severe duty magnets come equipped with the armor-clad "Durabelt", a heavy-duty drive assembly, lagging on the drive pulley and reinforced suspension/mounting arrangement.

Electromagnet Options

- Hazardous locations and CSA approved designs
- Special paint
- 4-point suspension systems (stationary models)
- Special belt designs such as: 3" rubber cleats (MRF design), stainless steel cleats and high temperature belts (self-cleaning models)
- Special motor voltages (self-cleaning models)
- Dust cover, belt guards and pulley guards (self-cleaning models)
- Zero speed switch (self-cleaning models)
- Severe Duty design package - Armor clad "Durabelt", lagging on drive pulley and heavy-duty drive assembly (self-cleaning models)
- Custom designs (all models)

AC RECTIFIERS AND FEATURES

All electromagnets require steady DC power. A Dings® rectifier is a piece of auxiliary equipment that supplies electric power to electromagnets. It converts the alternating current (AC) from your local power source to the necessary direct current (DC) needed by electromagnets. The rectifier consists of a hinged door cabinet and an internal assembly of electrical components. Rectifiers are available in a wide range of wattages to handle to power requirements of any size electromagnet.

- DC Wattage up to 50kW to match magnet requirements
- No maintenance solid state silicon diodes
- Voltage regulation within 3.5 % from no load to full load
- Overload capacity for short infrequent periods
- Hinged door cabinet (easy access)
- NEMA 12, 4, 4X (stainless steel) or 9 available
- ETL listed, UL and CSA approved available

Dings® AC Rectifier

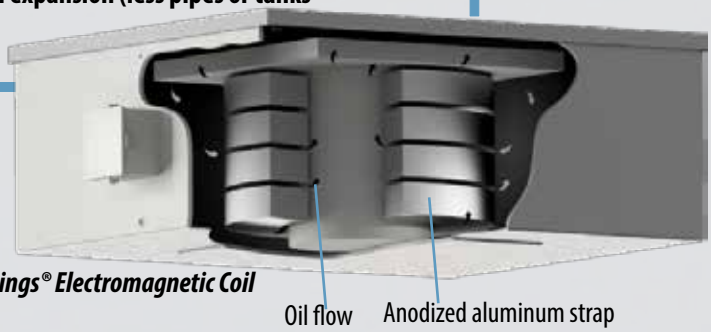
ELECTROMAGNET COILS

Dings® electromagnetic coils are wound with an anodized aluminum strap; an exclusive design that generates more magnetism than any other on the market! This design outlasts and out-performs "conventional" round wire (copper or bare or anodized aluminum) coils that can lead to coil burn-outs.

Dings® electromagnetic coils stay cooler - operating at a much lower temperature. Since electromagnets perform best at lower operating temperatures, this design ensures Dings® magnets are stronger and more efficient. With "conventional" round wire coils, inside turns are not cooled evenly and produce hot spots that damage coils. Each turn of the Dings® electromagnetic coil is exposed to oil-cooling and is in constant contact with oil, therefore, eliminating the need for an oil expansion tank. Oil is free to flow around and in between each coil to maximize cooling effect.

- **20-Year Warranty on coil burnout**
- **No insulation needed - eliminating the major cause of coil failure (insulation breakdown)**
- **More magnetism and separating power - generated by extra turns**
- **Each turn is exposed to oil-cooling (ensuring a stronger, more efficient magnet)**
- **Eliminates the need for external oil expansion (less pipes or tanks that can easily be damaged)**
- **Exceeds Class "H" insulation rating**

20-YEAR WARRANTY
Dings® exclusive coil design protects against magnet burnout

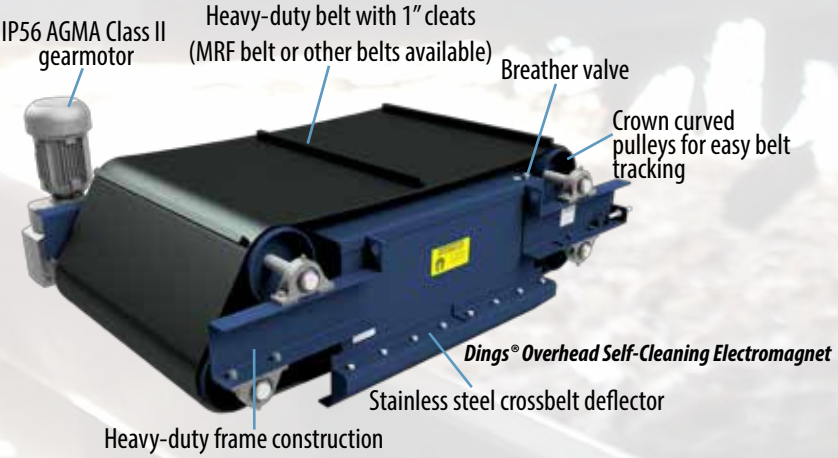


Dings® Electromagnetic Coil

ELECTROMAGNET ADDITIONAL FEATURES

- **Expansion of the high dielectric strength cooling oil takes place inside the magnet box**
- **Easy access to oil level, oil drain and oil fill plugs**
- **One-way pressure relief valve (keeps moisture out of the magnet box)**
- **NEMA 4 terminal box**
- **Additional wear plate (provides extra protection for the magnet impact area)**
- **IP56 AGMA Class II direct drive gearmotor**
- **Inline or crossbelt mounting positions**
- **Heavy-duty belt**
- **Stainless steel deflector on crossbelt applications**
- **Sizes to fit many belt widths**

Dings® Overhead Self-Cleaning Electromagnet



Dings® Overhead Self-Cleaning Electromagnet

DINGS® OVERHEAD PERMANENT MAGNETS

Overhead Permanent Magnets are non-electric and are suspended over conveyor belts or vibratory feeders. No external power source is required to generate the magnetic field. Ferrous tramp metal that is part of the material burden passing under the magnet is attracted to the magnet face during operation. Any ferrous metal that is attracted to the magnet face is either automatically and continuously removed with our self-cleaning models or held in place, until manually removed with our stationary models.

Self-Cleaning

- GUARANTEED Lifetime Warranty on magnetism
- Dings® Flux Control (DFC) circuit provides a stronger, deeper and more uniform magnetic field
- Unique construction allows a smaller, lighter magnet for a given strength than any other in the industry
- Different magnet strengths for different suspension heights to meet your specific application
- Sizes to fit many belt widths
- IP56 AGMA Class II direct drive gear reducer
- Removable cross belt deflector
- Stainless steel frame

Stationary

- GUARANTEED Lifetime Warranty on magnetism
- Dings® Flux Control (DFC) circuit provides a stronger, deeper and more uniform magnetic field
- No power supply
- Maintenance-free design
- Sizes to fit many belt widths
- 3-point or 4-point suspension systems available

Self-Cleaning models have a belt that travels continuously across the face of the magnet body to automatically discharge attracted ferrous metal away from the magnetic zone. These powerful models come equipped with a heavy-duty rubber belt that has 1" square vulcanized rubber cleats to remove ferrous metal from the material stream. Other cleat styles and sizes are available for use in different ferrous recovery applications. To drive the magnetic belt, a direct drive gear reducer is used or a hydraulic drive is available upon request.

Stationary models are maintenance-free with no moving parts. This means no lubrication, no tightening or replacing of hardware needed. Ferrous metal is pulled out of the material stream to the face of the magnet. Any ferrous metal that is attracted to the magnet face is held in place until manually removed. Designed specifically for easy installation; this model comes with a 3-point suspension system (4-point suspension system available) that includes two steel cables and one turnbuckle connected to a common bull ring. Adjustment of the magnet suspension angle is easy and only involves adjustment of the turnbuckle. There is no measuring, shortening, lengthening or cutting of cable required.

Permanent Magnet Options

- Special paint
- 4-point suspension systems (stationary models)
- Special belt designs such as: 3" rubber cleats (MRF design), stainless steel cleats and high temperature belts (self-cleaning models)
- Special motor voltages (self-cleaning models)
- Dust cover, belt guards and pulley guards (self-cleaning models)
- Zero speed switch (self-cleaning models)
- Sweep arm assembly- to remove metal from the face of the magnet (stationary models)
- Custom designs (all models)

for Overhead Permanent Magnets

DINGS® FLUX CONTROL (DFC) CIRCUIT

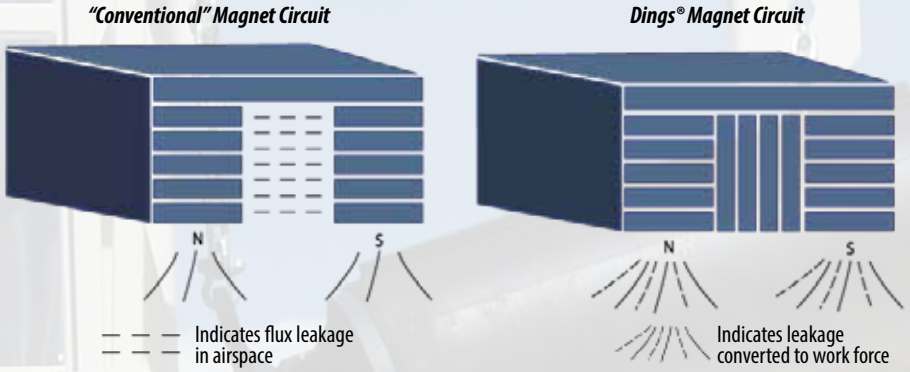
Dings® Flux Control (DFC) circuit was a breakthrough in the design of Overhead Permanent Magnets. It eliminates internal leakage between magnetic poles and improves separating performance.

Other "conventional" magnetic circuits contain air or filler material between the magnetic poles; this allows flux (magnetism) to leak out and be wasted. In the DFC design, blocking magnets are strategically positioned in the spaces between the magnetic poles. These blocks redirect the flux outward, into your product, converting the wasted flux lines to working force, which makes the magnet more efficient.

The overall strength of the magnet is improved in three ways:

1. The magnetic field is stronger
2. The magnetic field extends deeper
3. The magnetic field pattern is more uniform

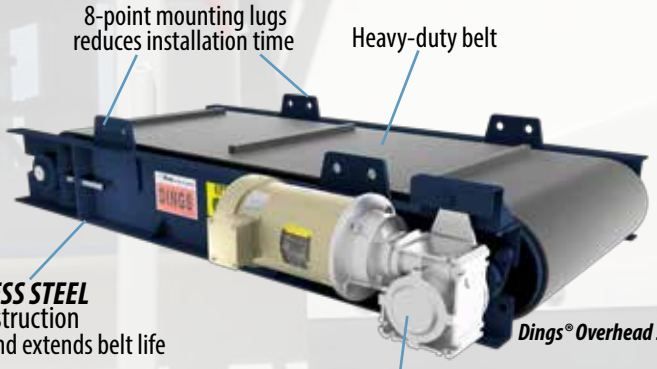
By using the DFC effectively, Dings® magnetic solution experts can manufacture any sized magnet that has just the right amount of magnetic power for your specific application - creating savings in weight and cost.



PERMANENT MAGNET ADDITIONAL FEATURES

- **GUARANTEED Lifetime Warranty on magnetism**
- **Dings® Flux Control (DFC) circuit**
- **No power supply for the magnet**
- **3 or 4-point suspension systems**
- **Maintenance-free design**
- **IP56 AGMA Class II direct drive gear reducer**
- **Inline or crossbelt mounting positions**
- **Heavy-duty belt**
- **Stainless steel deflector (cross-belt applications)**
- **Sizes to fit many belt widths**

Dings® Overhead Stationary Permanent Magnet



Dings® Overhead Self-Cleaning Permanent Magnet

Stainless Steel Frame

Dings® Overhead Permanent Magnets have a non-magnetic laser cut stainless steel frame. This prevents ferrous metal from collecting on the frame and in between the belt and magnet face (belt "porcupining")

MAGNET PURCHASING CONSIDERATIONS

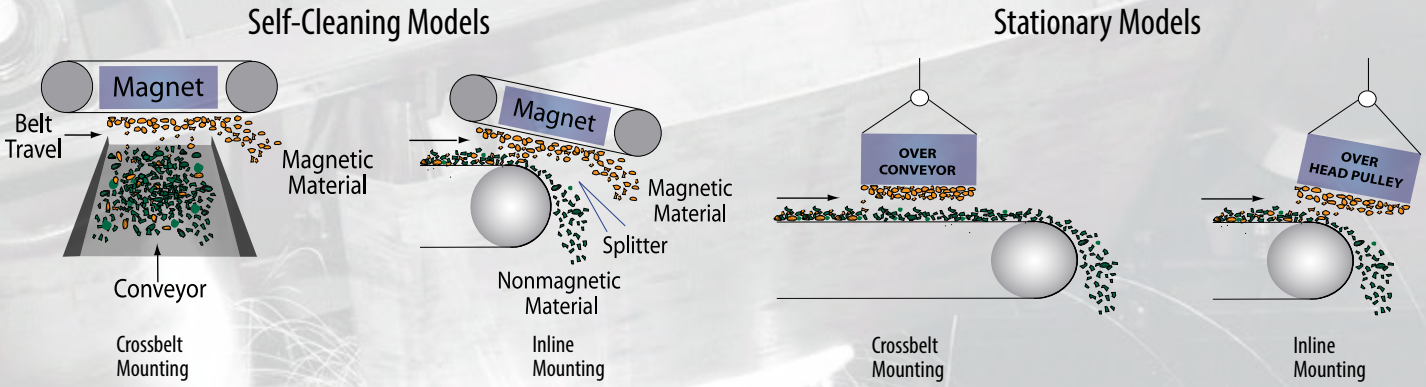
CROSSBELT VS. INLINE MOUNTING POSITIONS

Dings® overhead magnets are available in two suspension types: Inline and Crossbelt.

In an inline mounting position, the magnet is installed over the conveyor head pulley so the magnet face is parallel to the travel direction of material falling off the conveyor. The material is loosening up as it travels through its trajectory after leaving the head pulley. The head pulley must be made from non-magnetic material to avoid reduced ferrous recovery.

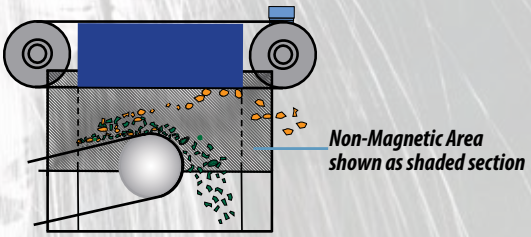
In a crossbelt mounting position, the magnet is installed over the conveyor such that magnet is at a right angle to the travel direction of the material on the conveyor. When compared to an inline mounted magnet, a larger size magnet is required to remove ferrous from a crossbelt application (since ferrous on the belt surface has to be pulled up through the burden).
If the magnet cannot be installed over the head pulley, install it over the flat section of the conveyor. Magnetic performance may be affected by magnetic material in the field; see "**NON-MAGNETIC AREA**" below.

Inline installation is preferred because magnet separation efficiency is at its best when the magnet is located over where conveyed material opens up during its path through the air



NON-MAGNETIC AREA

Magnetic performance will be affected by magnetic material located near the magnet. Components such as I-beams, metal supports, side skirts, hoppers and splitters have to be made of non-magnetic material. For recommendations on where to install your magnet, contact any of our specialists.



Note:
Contact Dings® Company Magnetic Group to discuss your magnet application details. Our engineering staff is on standby to solve any magnet needs by drawing upon decades of expertise. We will provide you with magnet sizing and positioning advice that yields the best possible magnetic performance results. After installation, we continue to provide expert customer service and support through our entire staff. Our customers rely on Dings® Company Magnetic Group to provide support for several generations of magnet products.

Dings magnetic group

120-YEARS OF EXPERIENCE

APPLYING THE PROPER MAGNET FOR YOUR APPLICATION

Contact Us To Discuss Your Application and Magnetic Needs

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