



Foreign Body Removal

Magnetic Separation & Metal Detection Systems



Eclipse Magnetics

Over 100 Years of Manufacturing Excellence



Serving some of the leading names in processing, including:

- Nestlé
- Mondelez
- Pepsico
- Kellogg's
- Weetabix
- Rank Hovis
- Premier Foods
- Allied Bakeries
- Unilever
- Warburtons
- Mars
- Pfizer
- GlaxoSmithKline
- Genzyme
- Roche
- AstraZeneca

Innovation in Magnetic Technology

With 100 years of experience in the design and manufacture of high performance magnetic systems, we supply critical equipment to some of the leading names in the most demanding industries.

Our magnetic technology is widely used at leading worldwide companies and in major development projects, all requiring a guarantee of equipment performance.

Designing Excellence

We have track record of producing high quality products backed by a commitment to total customer service. Our technical application teams have a wealth of experience, thus ensuring many of our products are market leading innovations.

All manufacturing is carried out under an ISO 9001 certified quality management system and we are accredited to ISO 14001 environmental standards.

Unrivalled Product Range

We serve worldwide markets with an extensive product range including workholding systems, filtration systems, foreign body removal systems, magnetic assemblies and complex magnetic industrial equipment used in industries such as automotive, aerospace, food processing and nuclear.

Many of our products are unique and are covered by global patents.

Process Protection

Magnetic Separation & Metal Detection Systems

Managing Risk – Process Safety

One of the greatest challenges to processing industries is ensuring maximum integrity of the finished product. Failure to do so can be catastrophic with the real risk of causing personal harm to the consumer, product scrappage/recall costs and high profile brand damage.

To protect themselves, major retailers now ask their suppliers to implement safety management systems. Hazard Analysis and Critical Control Point (HACCP) is an internationally recognized system for reducing the risk of safety hazards.

Our magnetic separation systems are integral to HACCP in almost every processing industry. They remove ferrous and para-magnetic (including stainless steel) contamination from process lines, preventing product contamination and damage to machinery.

We produce high-quality, high-power magnetic separators for most applications, including bulk grain, dry powders, damp powders, liquids and syrups and a comprehensive range of metal detectors.



We offer a range of benefits:

Experience

With over 30 years' experience we are perfectly placed to offer a range of separation and detection systems which are integral to process safety across a variety of industries.

Knowledge

We pride ourselves on understanding the business of our customers, the risks they face and changing market requirements.

Flexibility

The ability to offer a flexible and responsive solution, enabling short lead times to reactive requirements and ensuring process safety is never compromised.

Advancement

From simple manually cleaned units to fully automated touch screen PLC controlled systems, we can offer the latest designs and technology available.

Multi-Site Strategies

We offer group wide solutions for multi-site organisations, specialising in final product improvement and risk management.

A Single Source

Our clients can deal with a single source for separation and detection solutions, catering for all stages of production and process volumes.

Bespoke Design

Utilising the latest 3D design software, we can produce bespoke systems in short lead times.

High Quality Manufacture

Using the latest magnetic technology and surface finishing techniques we produce high quality systems suitable for use in food or pharmaceutical environments.

Standards

We are fully conversant with all major food safety policies such as FSA, FDA and IFS. Plus other institutes such as BRC and GFSI.



In-house ATEX Certification

EU Directive 94/9/EC

In addition to high performance products, a major benefit of working with Eclipse Magnetics is that we are one of the few manufacturers who manufacture and certify ATEX approved equipment in-house. Most manufacturers have to submit to an external independent test house, thereby incurring additional cost and extending lead times.

We supply fully certified equipment for use in zones 20, 21, 22 or gas zone 0, 1 and 2 environments. ATEX product certification (or EC Type Examination) is a check on the design specification of a product in relation to a series of relevant standards laid out under the directive.

It involves detailed examination, testing and assessment of equipment intended for use in potentially hazardous areas, with the end result being the issue of an ATEX certificate and report, confirming and demonstrating that the product is safe to use (within certain parameters) within potentially explosive atmospheres.

The certification process must be undertaken by an approved organisation such as Eclipse Magnetics.



Foreign Body Removal

Find Your Solution

Our range of Foreign Body Removal systems encompasses products for a variety of applications.

Use the chart below to find the most suitable system for your application.



Secondary Separators

Secondary separators guarantee product purity and quality by removing sub-micron ferrous particles e.g, process equipment wear. This includes paramagnetic stainless steel particles. Secondary separators also remove residual primary contamination

Product	Typical Applications						Selection Criteria						Page
	Food	Chemical	Pharmaceutical	Plastics	Recycling	Wood	ATEX Approved	Gravity Feed	Pneumatic Feed	Conveyor Feed	Manual Clean	Automatic Clean	
Magnetic Rod	✓	✓	✓	✓	—	—	✓	✓	✓	—	✓	—	P9
Sampling Probe	✓	✓	✓	✓	—	—	—	—	—	—	✓	—	P10
Square / Circular Grid	✓	✓	✓	✓	—	—	✓	✓	—	—	✓	—	P11
Sieve Magnet	✓	✓	✓	—	—	—	✓	✓	—	—	✓	—	P12
Easy Clean Grid	✓	✓	✓	✓	—	—	✓	✓	—	—	✓	—	P13
Housed Easy Clean Grid	✓	✓	✓	✓	—	—	✓	✓	—	—	✓	—	P14
Auto Shuttle	✓	✓	✓	✓	—	—	✓	✓	—	—	—	✓	P16
Rota-Grid	✓	✓	✓	✓	—	—	✓	✓	—	—	✓	—	P18
Auto-Rota Shuttle	✓	✓	✓	✓	—	—	✓	✓	—	—	—	✓	P20
Pneumag	✓	✓	✓	✓	—	—	✓	—	✓	—	✓	—	P22
In-line Liquid Filter	✓	✓	✓	N/A	N/A	N/A	✓	N/A	N/A	N/A	✓	✓	P24

Primary Separators

Primary separators prevent machinery damage by removing 'Tramp' type contamination such as nuts, bolts and screws. Typically installed at bulk intake points, our range is shown below

Product	Typical Applications						Selection Criteria						Page
	Food	Chemical	Pharmaceutical	Plastics	Recycling	Wood	ATEX Approved	Gravity Feed	Pneumatic Feed	Conveyor Feed	Manual Clean	Automatic Clean	
Strip Magnet	✓	✓	✓	✓	✓	✓	✓	—	—	✓	✓	—	P26
Hinged Strip Magnet	✓	✓	✓	✓	✓	✓	✓	—	—	✓	✓	—	P27
Underflow Magnet	✓	✓	✓	✓	✓	✓	✓	✓	—	✓	✓	—	P28
Housed Underflow Magnet	✓	✓	✓	✓	✓	✓	✓	✓	✓	—	✓	—	P29
Bullet Magnet	✓	✓	✓	✓	✓	✓	—	✓	✓	—	✓	—	P30
Chute Magnet	✓	✓	✓	✓	✓	✓	✓	✓	✓	—	✓	—	P31
Drum Magnet	✓	✓	✓	✓	✓	✓	—	✓	—	✓	—	✓	P32
Housed Drum Magnet	✓	✓	✓	✓	✓	✓	✓	✓	—	✓	—	✓	P33
Permanent Head Roller	✓	✓	✓	✓	✓	✓	—	—	—	✓	—	✓	P34
Permanent Plate Magnet	✓	✓	✓	✓	✓	✓	✓	—	—	✓	✓	—	P35
Permanent Magnetic Overband	✓	✓	✓	✓	✓	✓	—	—	—	✓	—	✓	P36

A Choice Of Systems

Primary & Secondary Separators

The following pages detail our range of options which protect against all types of ferrous contamination.

Featured Products

Our most popular separation options are highlighted below:

Easy Clean Housed Grids

Ideal for the removal of fine iron and para-magnetic contamination from a range of dry free flowing or gravity fed products such as grain, flour, granulates and powders. Available in a range of sizes and multi-row magnet configurations.



Find out more on page 14

Autoshuttle

With an automated cleaning function, the Autoshuttle enables 24/7 screening of processed free flowing dry granulates and powders such as sugar and salt.



Find out more on page 16

Pneumag Separator

A high intensity separator, designed to operate on pneumatic dry powder or granulate conveying lines to provide protection against ferrous and para-magnetic contamination.



Find out more on page 22

High Intensity Liquid Filter

Designed to operate in pressurised transfer lines to remove ferrous and para magnetic particles from liquid processing lines. For items such as chocolate, syrup, jam, pastes and beverages.



Find out more on page 24

Rota-Grid

High intensity separator which removes ferrous contamination from substances which are prone to caking or bridging e.g. starch and proteins. The rotating action ensures a continued flow with no blockages.



Find out more on page 18

Magnetic Rod

High Intensity — Rare Earth **Secondary Protection**



Introduction

Our high intensity rare earth magnetic rods are extremely efficient at removing ferrous and para-magnetic contamination, down to sub-micron size, from free flowing products including powders and liquids.

Rods are of particular interest to OEMs who wish to incorporate them into their machinery with the minimal amount of re-design. Each rod is tapped with an M6 thread at both ends as standard for ease of installation, or alternatively without threaded detail or with studs, which can be specified on ordering. Many sizes are held in stock to allow for same day despatch.

Cleaning

Depending on the configuration, rod magnets can be cleaned in seconds by simply pushing the attracted contamination to one end, this will release it enabling further analysis to be conducted.

Suitable Products

All powders, granulates and liquids etc.

Suitable Locations

Any process area.

Benefits

- Easy to clean
- Simple to use
- Enables flexible design
- Removes micron sized contaminants
- Meets audit requirements
- Rare earth, choice of four magnetic strengths



Technical Data

Performance

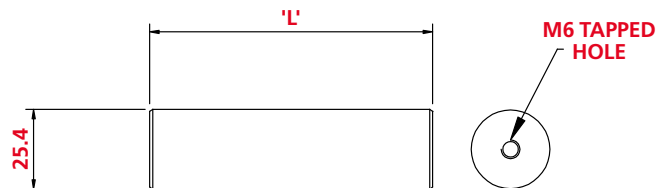
Magnetic performance	7,000, 9,000, 11,000 and 12,000 Gauss
Performance reading	On tube surface
Magnetic material	Rare Earth Neodymium Iron Boron
Magnet grade	N35 and N45 – Inspected and confirmed via hystero-graph prior to use
Temperature	-20°C / +90°C

Material

Tubing	316 grade stainless steel - Aerospace Quality
Other parts	316 grade stainless steel
Surface finish	Polished to 0.6µm
Rod end detail	Tapped M6 x 8mm both ends

Options

- High temperature Samarium Cobalt magnetic material (+220°C)
- Any thread size and detail
- Supplied without tapped detail or studded
- ATEX certified
- Pharmaceutical specification



Part Number	L mm	Weight kg
SR100	100	0.35
SR150	150	0.53
SR200	200	0.70
SR250	250	0.88
SR300	300	1.05
SR350	350	1.23
SR400	400	1.40
SR450	450	1.58
SR500	500	1.75
SR550	550	1.93
SR600	600	2.10
SR650	650	2.28
SR700	700	2.45
SR750	750	2.63
SR800	800	2.80
SR850	850	2.98
SR900	900	3.15
SR950	950	3.33
SR1000	1000	3.50

Sampling Probe

High Intensity — Rare Earth **Secondary Protection**

Introduction

Our high intensity magnetic sampling probe is ideal for quality control personnel to quickly and easily carry out product purity inspections on any powder, granulate or liquid for ferrous or para-magnetic contamination.

The probe should be used for sample inspection of product at goods inward, prior to despatch and at critical control points throughout the process line for batch testing. Simply allow the processed product to pass over the magnetic section of the probe or agitate in any static product. Any ferrous or para-magnetic contamination present will be highly visible when concentrated on the probe's surface.

Cleaning

Cleaning can be conducted in seconds. Remove the unit from the sampling area and, while holding the body of the probe, simply pull the rear handle backwards. This will release any attracted contamination enabling further analysis to be conducted.

Suitable Products

Any powders, granulates, liquids, sauces, juices, chocolate e.t.c.

Suitable Locations

Existing sampling points.

Benefits

- Easy to clean
- Simple to use
- Indicates if contamination is present
- Removes micron sized contaminants
- Meets audit requirements
- Rare earth 9,000 Gauss



Technical Data

Performance

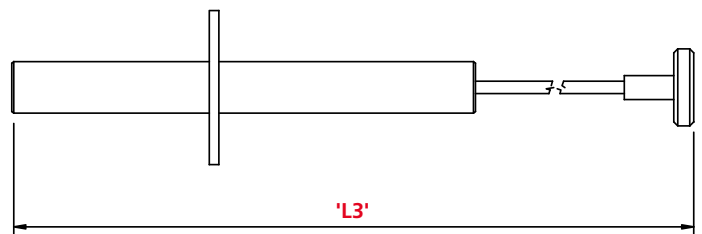
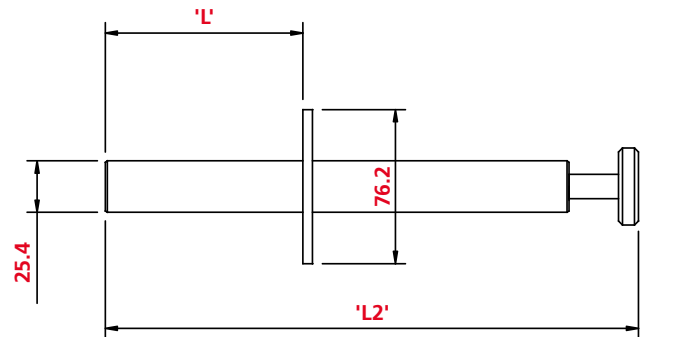
Magnetic performance	9,000 Gauss
Performance reading	On tube surface
Magnetic material	Rare Earth Neodymium Iron Boron
Magnet grade	N45 – Inspected and confirmed via hystero-graph prior to use
Temperature	-20°C / +90°C

Material

Tubing	316 grade stainless steel - Aerospace Quality
Other parts	316 grade stainless steel
Surface finish	Polished to 0.6µm

Options

- High temperature Samarium Cobalt magnetic material (+220°C)
- Pharmaceutical specification
- Magnet lengths up to 1000mm
- ATEX certified



Part Number	L mm	L2 mm	L3 mm	Weight kg
MSP100	100	270	400	0.9
MSP200	200	470	700	1.2
MSP300	300	670	1000	1.6

Square / Circular Grid

High Intensity — Rare Earth **Secondary Protection**



Introduction

High intensity grids are very versatile and can be used in most powder, granulate and liquid applications for the removal of ferrous and para-magnetic contamination down to sub-micron size. These units can be manufactured to any size and with any number of rods to meet most application requirements. The grids' low profile side frame means they can be installed into existing chute work or machinery where height is restricted. Grids are of particular interest to OEMs who wish to incorporate them into their machinery with the minimal amount of redesign.

Cleaning

Due to the high intensity magnetic field and simple design, fixed grids require more effort to clean than the Eclipse Magnetics 'easy clean' design (see page 13). Remove the grid from its process position and, using a gloved hand, push the contamination down each rod. This will release the majority of all attracted contamination. Adhesive tape can be used to remove remaining or very fine contaminants.

Suitable Products

Dry powders and granulates.

Suitable Locations

Vertical or angled process lines.

Benefits

- Simple to install
- Reduces 'spark' risk
- Removes sub-micron sized contaminants
- Meets audit requirements
- Rare earth 7,000, 9,000, 10,000 and 12,000 Gauss options



Technical Data

Performance

Magnetic performance	7,000, 9,000, 10,000, 11,000 and 12,000
Performance reading	On tube surface
Magnetic material	Rare Earth Neodymium Iron Boron
Magnet grade	N35 and N45 – Inspected and confirmed via hystero-graph prior to use
Temperature	-20°C / +90°C

Materials

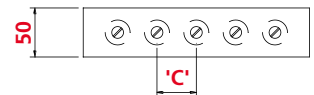
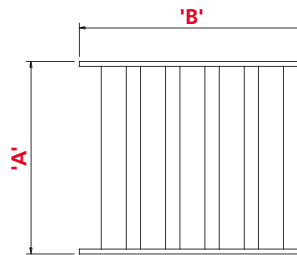
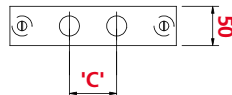
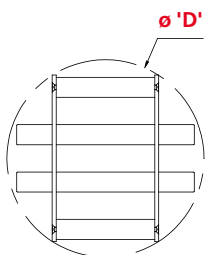
Grid frame	316 grade stainless steel
Tubing	316 grade stainless steel – Aerospace Quality
Other parts	316 grade stainless steel
Surface finish	Polished to 0.6µm

Options

- High temperature Samarium Cobalt magnetic material (+220°C)
- Sizes up to 1000mm x 1000mm
- ATEX certified
- Pharmaceutical specification

Part Number	Diameter mm	Centres C mm	No. Rods	Weight kg
Round				
CG100	100	45	2	1.2
CG150	150	50	3	1.5
CG200	200	60	3	2.2
CG250	250	60	4	3.7
CG300	300	60	5	5.0
CG350	350	60	6	7.0
CG400	400	60	7	9.5
CG450	450	60	7	14
CG500	500	60	8	17

Part Number	A mm	B mm	C mm	No. Rods	Weight kg
Square					
GM1515	150	150	60	2	3.2
GM2020	200	200	60	3	3.8
GM2525	250	250	55	4	6.2
GM3030	300	300	55	5	8.0
GM3535	350	350	55	6	11.0
GM4040	400	400	55	7	14.8
GM4545	450	450	55	8	19.2
GM5050	500	500	55	9	21.0



Sieve Magnet

High Intensity — Rare Earth **Secondary Protection**



Introduction

Our sieve magnet is a unique lightweight, full stainless steel design which reduces the stress on the sieve that other types often cause. The unit is positioned beneath the sieve screen allowing excellent separation to be achieved. Due to the high intensity of the magnetic field within the unit, even sub-micron sized particles generated by the wear of the sieve screen can be successfully attracted.

Cleaning

Simply remove the top pan and screen from the sieve. The magnet can now be removed from the bottom pan and placed onto a non-magnetic surface. Using the supplied cleaning tool, simply scrape all attracted contamination to each rod end where it can be removed.

Suitable Products

Dry powders, granulates and liquids etc.

Suitable Locations

Post sieve screen.

Benefits

- Easy to clean
- Reduces 'spark' risk
- Meets audit requirements
- Removes sub-micron sized contaminants
- Protects against screen wear and failure
- Rare earth, 9,000, 7,000, 11,000 and 12,000 Gauss
- Static dissipative all metal construction



Technical Data

Performance

Magnetic performance	7,000, 9,000, 11,000 and 12,000 Gauss
Performance reading	On tube surface
Magnetic material	Rare Earth Neodymium Iron Boron
Magnet grade	N35 and N45 – Inspected and confirmed via hystero-graph prior to use
Temperature	-20°C / +90°C

Material

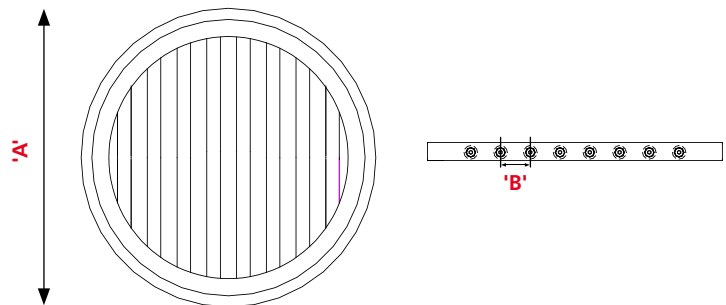
Frame	316 grade stainless steel
Tubing	316 grade stainless steel - Aerospace Quality
Surface finish	Polished to 0.6µm
Sealing	Please see options below

Options

- High temperature Samarium Cobalt magnetic material (+220°C)
- Magnet and screen metal detectable silicon rubber seal
- Pharmaceutical specification
- ATEX certified

Metal Detectable Seal

The Eclipse Magnetics metal detectable sieve magnet and screen seal is a patented rubber seal that allows for easy detection in case of breakage due to excessive sieve wear. The magnet and screen seal differ in size and can be fitted to the patented sieve magnet. These seals can also be retro fitted to existing sieve magnets and screens from leading manufacturers. All materials used to manufacture these seals are listed in the FDA regulations.



Part Number	A mm	B mm	Number of Rods	Weight kg	To be used in types
SMRF	545	55	8	14	RussellFinex - Compact
SMFG	545	55	8	14	Farleygreene - Sievemaster



Easy Clean Grid

High Intensity — Rare Earth **Secondary Protection**



Introduction

Our high intensity easy clean grid is very versatile and can be utilised in most powder and granulate applications for the removal of ferrous and para-magnetic contamination down to sub-micron size. These units can be manufactured to any size and with any number of rods to meet most application requirements.

The grid's low profile side frame allows these units to be installed into existing chute work or machinery where height is restricted. Easy clean grids can be cleaned in under fifteen seconds, so are of particular interest to those companies that run 24/7 operations or where downtime is minimal. These grids can also be supplied in housings for ease of installation into existing process lines (see page 14).

Cleaning

These grids can be cleaned in seconds. Simply move the swing clamp to the 'open' position, pull the magnetic cores out of the stainless steel tube assembly and the contamination simply falls away. It is at this stage that all attracted contamination can be easily removed allowing for inspection or further analysis.

Suitable Products

Dry powders and granulates.

Suitable Locations

Any vertical or slightly angled process line.

Benefits

- Simple to install
- Reduces 'spark' risk
- Removes sub micron sized contaminants
- Meets audit requirements
- Rare Earth, 7,000, 9,000 and 10,000 Gauss options



Technical Data

Performance

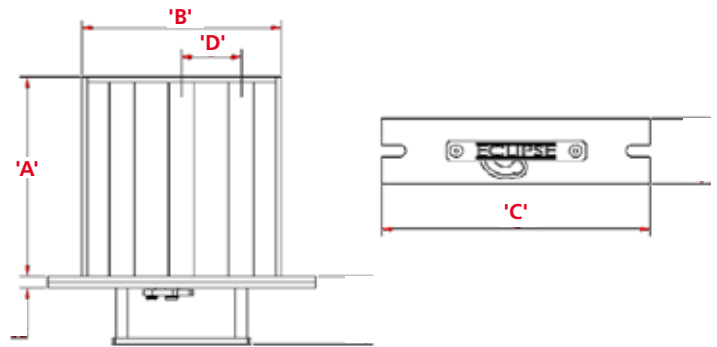
Magnetic Performance	7,000, 9,000 and 10,000 Gauss
Performance Reading	On tube surface
Magnetic Material	Rare Earth Neodymium Iron Boron
Magnet Grade	N35 & N45 – Inspected & confirmed via hystergaph prior to use
Temperature	-20° C/ + 90° C

Material

Grid Frame	316 Grade Stainless Steel
Tubing	316 Grade Stainless Steel – Aerospace Quality
Other Parts	316 Grade Stainless Steel
Surface Finish	Polished to 0.6µm
Swing Clamps	304 grade stainless steel

Options

- High temperature Samarium Cobalt magnetic material (+220°C)
- Sizes up to 1000mm x 1000mm
- Pharmaceutical specification
- Safety relay switch
- ATEX certified



Part Number	A mm	B mm	C mm	D mm	No. Of Rods	Weight kg
EC1515	150	150	220	60	2	3.8
EC2020	200	200	270	60	3	4.2
EC2525	250	250	320	55	4	6.8
EC3030	300	300	370	55	5	8.6
EC3535	350	350	420	55	6	12.0
EC4040	400	400	470	55	7	16.3
EC4545	450	450	520	55	8	21.1
EC5050	500	500	570	55	9	25.0

Housed Easy Clean Grid

High Intensity — Rare Earth **Secondary Protection**

Introduction

Our high intensity magnetic easy clean housed grids offer unsurpassed levels of contamination removal, removing sub-micron ferrous and para-magnetic contamination from the most demanding and arduous of process environments. The unit contains one high intensity easy clean magnetic grid. The grid is secured into the housing by tri-cone locking nuts which ensure even pressure is generated around the food grade seal.

Units can be supplied with quick release toggle clamps if cleaning time is to be kept to a minimum. Alternatively, consider the Auto-Shuttle unit, which requires no intervention (see page 16).

It is common to have numerous units installed throughout a processing facility to ensure contamination is removed at source of generation.

All dry powders and granular type materials can be processed through the unit. Electrical safety interlocks can be fitted to the grid to stop the process should it be accidentally opened.

Cleaning

This unit uses the Eclipse Magnetics 'easy clean' system. This design allows all attracted contamination to be easily and quickly collected for further inspection or analysis.

When the unit requires cleaning, simply remove the outer grid securing tri-cone locking nuts and remove the grid from the housing. Remove the central tri-cone locking nut and separate the grid assembly allowing all attracted contamination to simply fall away.

Suitable Products

Dry powders and granulates.

Suitable Locations

Inlet / outlet points, pre- / post-silo and machinery points.

Benefits

- Easy to clean
- High collection capacity
- Reduces 'spark' risk
- Removes sub-micron sized contamination
- Meets audit requirements
- Rare earth 7,000, 9,000, 10,000 and 12,000 Gauss



Multi-row models & track systems available



Technical Data

Performance

Magnetic performance Easy Clean - 7,000 Gauss*
 Easy Clean - 9,000 Gauss
 Easy Clean - 10,000 Gauss
 Fixed - 12,000 Gauss

Performance reading On tube surface

Magnetic material Rare Earth Neodymium Iron Boron
 Magnet grade N45 – Inspected and confirmed
 via hystero-graph prior to use

Temperature -20°C / +90°C

Pressure + / - 0.2 Bar

*7,000 Gauss should be selected for bread flour applications to allow for permissible iron oxide.

Material

Housing 316 grade stainless steel
 Other Parts 316 grade stainless steel
 Surface finish Brushed internally / externally to 1.2µm
 Sealing Self adhered white foam
 Tri-cone Nuts Stainless steel

Options

- Stainless steel toggle clamps
- Overpressure to + / - 10 Bar
- Special sizes up to 1000mm available
- 304 grade stainless steel
- Pharmaceutical specification
- ATEX certified
- Flanged to suit
- Safety relay switches
- Metal detectable silicon rubber seal – dark blue, FDA approved
- High temperature Samarium Cobalt magnetic material (+220°C)
- Triple and quad row options available

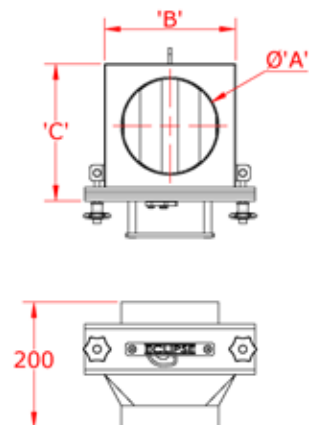
Single Row

Part Number	ø A mm	B mm	C mm	Number of Rods	Weight kg
Round					
ECHS100	100	158	168	2	7
ECHS150	150	208	218	3	9
ECHS200	200	258	268	4	11
ECHS250	250	308	318	5	23
ECHS300	300	358	368	6	27
ECHS350	350	408	418	7	32
ECHS400	400	460	470	8	41
Square					
ECHS1010	100	100	180	2	6
ECHS1515	150	150	230	2	8
ECHS2020	200	200	280	3	9
ECHS2525	250	250	330	4	16
ECHS3030	300	300	380	5	20
ECHS3535	350	350	430	6	25
ECHS4040	400	400	480	7	29

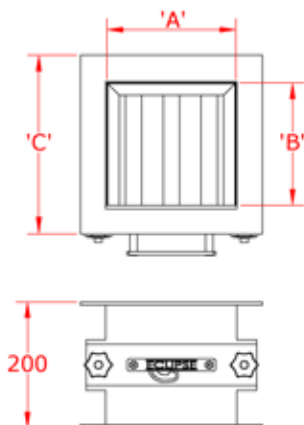
Double Row

Part Number	ø A mm	B mm	C mm	Number of Rods	Weight kg
Round					
ECHD100	100	158	168	2 + 1	10
ECHD150	150	208	218	3 + 2	13
ECHD200	200	258	268	4 + 3	18
ECHD250	250	308	318	5 + 4	24
ECHD300	300	358	368	6 + 5	31
ECHD350	350	408	418	7 + 6	38
ECHD400	400	458	470	8 + 7	47
Square					
ECHD1515	150	150	230	2 + 1	10
ECHD2020	200	200	280	3 + 2	15
ECHD2525	250	250	330	4 + 3	22
ECHD3030	300	300	380	5 + 4	26
ECHD3535	350	350	430	6 + 5	30
ECHD4040	400	400	480	7 + 6	34

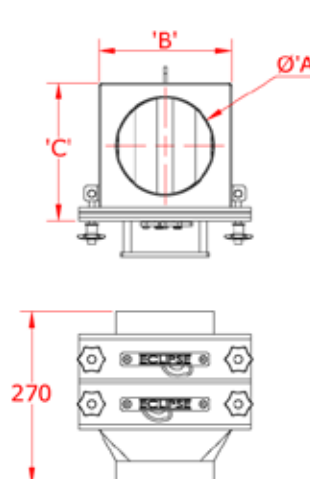
Round / Single Row



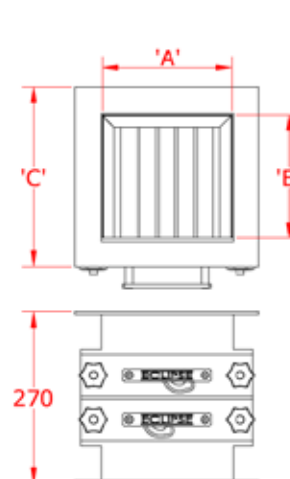
Square / Single Row



Round / Double Row



Square / Double Row



We can manufacture housed grids to suit non-square/round gravity chutes, please contact us for details. We also offer track support systems for safe, easy clean of magnetic cores.

Auto-Shuttle

High Intensity — Rare Earth **Secondary Protection**

Introduction

Our Auto-Shuttle magnetic separator enables screening of processed products 24 hours a day, seven days a week, without the need for manual intervention. The system can even carry out a full clean without the need to stop the process. The unit is supplied with a pre-programmed PLC that can either work independently or connected to the central control rooms system for remote activation or monitoring etc.

There are reed switches fitted to each end of the separator tubes to indicate the position of each magnetic core. The full system remains air tight throughout normal operation making it suitable for environments where ATEX equipment is required.

Cleaning

The magnetic cores remain in the process chamber until a cleaning signal is given. Then compressed air is fed into each separator tube forcing the core to the other end of the unit.

The contamination follows the core, which first passes through the product return chamber, which prevents loss of good product, and into the cleaning chamber where the collected contamination is deposited.

The cleaning chamber is fitted with a transition piece, which allows a collection container to be fitted. It is this container that is removed to assess the collected contamination.

Suitable Products

Dry powders and granulates, flour, sugar, herbs and salt, etc

Suitable Locations

Any vertical process line.

Benefits

- Fully autonomous in operation
- Reduces 'spark' risk
- Suitable for control room connection
- Removes micron sized contaminants
- Meets audit requirements
- Rare earth 7,000, 9,000 Gauss





Technical Data

Performance

Magnetic performance 7,000 and 9,000 Gauss
 Performance reading On tube surface
 Magnetic material Rare Earth Neodymium Iron Boron
 Magnet grade N45 – Inspected and confirmed via hysteregraph prior to use
 Temperature -20°C / +90°C
 Pressure +/- 0.2 Bar

Material

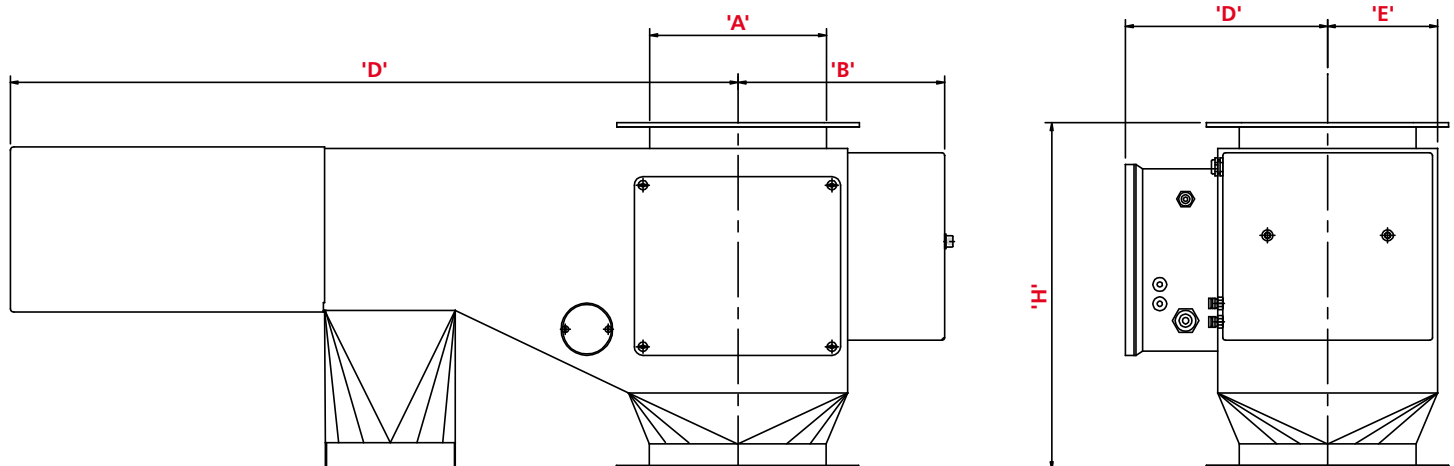
Housing 316 grade stainless steel
 Tubing 316 grade stainless steel - Aerospace Quality
 Other Parts 316 grade stainless steel
 Surface finish Brushed internally / externally to 1.2µm
 Sealing Self adhered white foam
 PLC Crouzet, pre-programmed
 Allan Bradley & Siemens available on request

Options

- High temperature Samarium Cobalt magnetic material (+220°C)
- Siemens, Mitsubishi or Allen Bradley PLC
- 304 grade stainless steel
- Pharmaceutical specification
- ATEX certified
- Flanged to suit
- Metal detectable silicon rubber seal – dark blue, FDA approved
- Single, triple and quad row units available



Part Number	Inlet / Outlet A mm	B mm	C mm	D mm	E mm	H mm	Number of Rods	Weight kg
Round								
ASHD150	150	217	215	775	103	400	3 + 2	31
ASHD200	200	242	240	850	128	400	3 + 2	38
ASHD250	250	267	265	925	153	400	4 + 3	47
ASHD300	300	292	290	1000	178	400	5 + 4	58
ASHD350	350	317	315	1075	203	400	6 + 5	69
ASHD400	400	342	340	1150	228	400	7 + 6	81
ASHD450	450	367	365	1225	253	400	8 + 7	96
Square								
ASHD1515	150	192	190	192	78	350	2 + 1	24
ASHD2020	200	217	215	217	103	350	3 + 2	28
ASHD2525	250	242	240	242	128	350	4 + 3	35
ASHD3030	300	267	265	267	153	350	5 + 4	43
ASHD3535	350	292	290	292	178	350	6 + 5	52
ASHD4040	400	317	315	317	203	350	7 + 6	61
ASHD4545	450	342	340	342	228	350	7 + 6	74



Rota-Grid

High Intensity — Rare Earth **Secondary Protection**

Introduction

Our high intensity magnetic Rota-Grid separator has been designed specifically to process difficult products that are prone to bridging and/or caking. The unit contains a centrally mounted magnetic 'rota' assembly: numerous 'easy clean' magnetic rods are arranged in a 'wheel' around and parallel to the axis of rotation. The number of rods used depends on the inlet and outlet size.

The assembly rotates, gently agitating the product being processed. It is this agitation that prevents blockages occurring.

All dry and semi-dry powders and granular type materials, such as starch etc., can be processed through the unit. The Rota-Grid can be supplied to the most stringent of standards, such as required in the pharmaceutical industry.

Cleaning

As the Rota-Grid uses the Eclipse Magnetics 'easy clean' system, cleaning can be completed in a matter of minutes.

To clean, simply remove the door and remove the assembly from the housing. Remove the magnetic cores from the assembly. All attracted contamination will then be released allowing for inspection or further analysis.

Suitable Products

Dry and semi-dry powders and granulates, starch, protein etc.

Suitable Locations

Any vertical process line.

Benefits

- Easy to clean
- Allows difficult products to be screened
- Reduces 'spark' risk
- Removes sub-micron sized contaminants
- Meets audit requirements
- Rare earth 7,000, 9,000, 10,000, 11,000 and 12,000 Gauss options





Technical Data

Performance

Magnetic performance 7,000, 9,000, 10,000, 11,000 and 12,000 Gauss
 Performance reading On product contact surface
 Magnetic material Rare Earth Neodymium Iron Boron
 Magnet grade N35 – Inspected and confirmed via hystero-graph prior to use
 Temperature -20°C / +60°C
 Pressure +/- 0.2 Bar
 Electrical spec. 415/380v industrial three phase IP65 rated motor gearbox

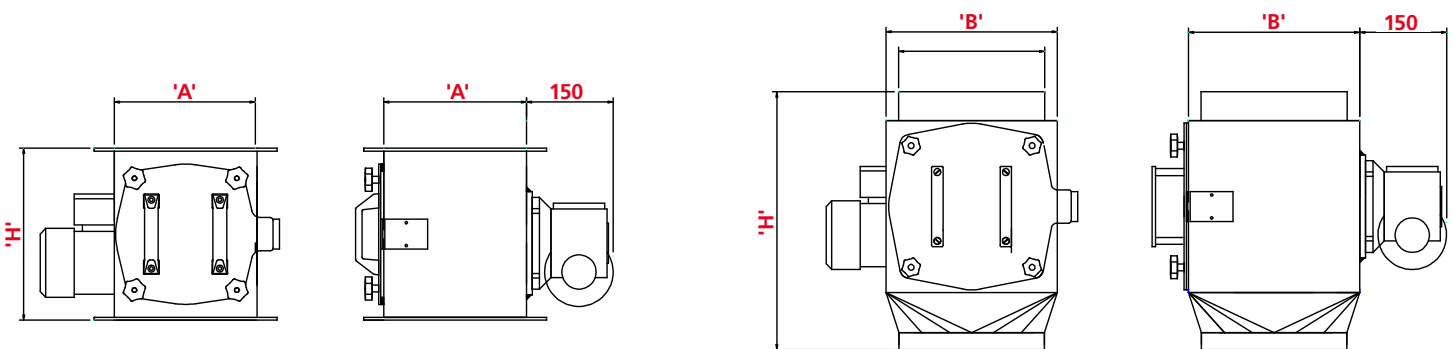
Material

Housing 316 grade stainless steel
 Tubing 316 grade stainless steel - Aerospace Quality
 Other Parts 316 grade stainless steel
 Surface finish Brushed internally / externally to 1.2µm
 Sealing Self adhered white foam
 Toggle Clamps Mild steel – bright zinc plated

Options

- Stainless steel toggle clamps
- High temperature Samarium Cobalt magnetic material (+220°C)
- Overpressure to +/- 5 Bar
- Sizes up to 500mm Ø or square
- 304 grade stainless steel
- Pharmaceutical specification
- ATEX certified
- Flanged to suit
- Metal detectable silicon rubber seal – dark blue, FDA approved

Part Number	Spout Dia. A mm	Width x Depth B mm	H mm	kW rating	Number of Rods	Weight kg
Round						
RG200	200	250 x 250	450	0.25	6	35
RG250	250	300 x 300	500	0.25	7	44
RG300	300	350 x 350	550	0.25	9	55
RG350	350	400 x 400	600	0.25	10	68
RG400	400	450 x 450	650	0.25	13	82
Square						
RG2020	200 x 200	200 x 200	250	0.18	5	26
RG2525	250 x 250	250 x 250	300	0.25	6	33
RG3030	300 x 300	300 x 300	350	0.25	7	43
RG3535	350 x 350	350 x 350	400	0.25	9	54
RG4040	400 x 400	400 x 400	450	0.25	10	67



Auto-Rota Shuttle

High Intensity — Rare Earth **Secondary Protection**

Introduction

Our Auto-Rota Shuttle combines the benefits of our Auto-Shuttle and Rota-Grid unit in one. The Auto-Rota Shuttle enables screening of difficult bridging and or caking products 24/7 without the need for manual intervention. The system can even carry out a full clean without the need to stop the process, thereby enabling continuous production.

The unit is supplied with a pre-programmed PLC that can either work independently or connected to the central control rooms system for remote activation or monitoring etc.

The full system remains air tight throughout normal operation making it suitable for environments where ATEX equipment is required.

Cleaning

The magnetic cores remain in the process chamber. When a cleaning signal is given, compressed air is fed into each separator tube forcing the core to the other end of the unit.

The contamination follows the core, first through the product return chamber, which prevents loss of good product, and into the cleaning chamber, where the collected contamination is deposited.

The cleaning chamber is fitted with a transition piece, which allows a collection container to be fitted. This container is removed to assess the collected contamination.

Suitable Products

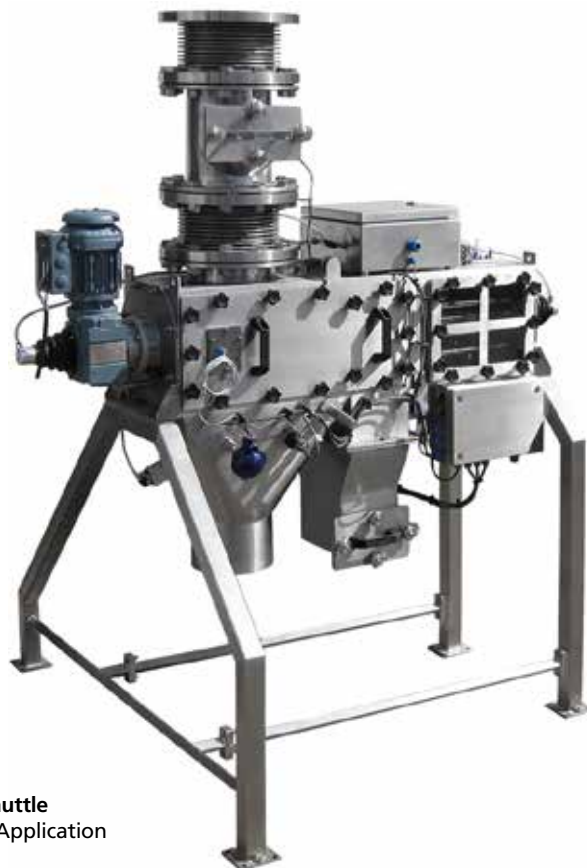
Dry and semi-dry powders and granulates, starch, protein etc.

Suitable Locations

Any vertical process line.

Benefits

- Fully autonomous in operation
- Reduces 'spark' risk
- Suitable for control room connection
- Removes sub-micron sized contaminants
- Meets audit requirements
- Rare earth 7,000, 9,000 and 10,000 Gauss options
- Allows difficult products to be screened



Auto-Rota Shuttle
Nuclear Fuel Application



Technical Data

Performance

Magnetic performance	7,000, 9,000, 10,000
Performance reading	On tube surface
Magnetic material	Rare earth neodymium iron boron
Magnet grade	N45 – Inspected and confirmed via hystero-graph prior to use
Temperature	-20°C / +60°C
Pressure	+ / - 0.2 Bar

Material

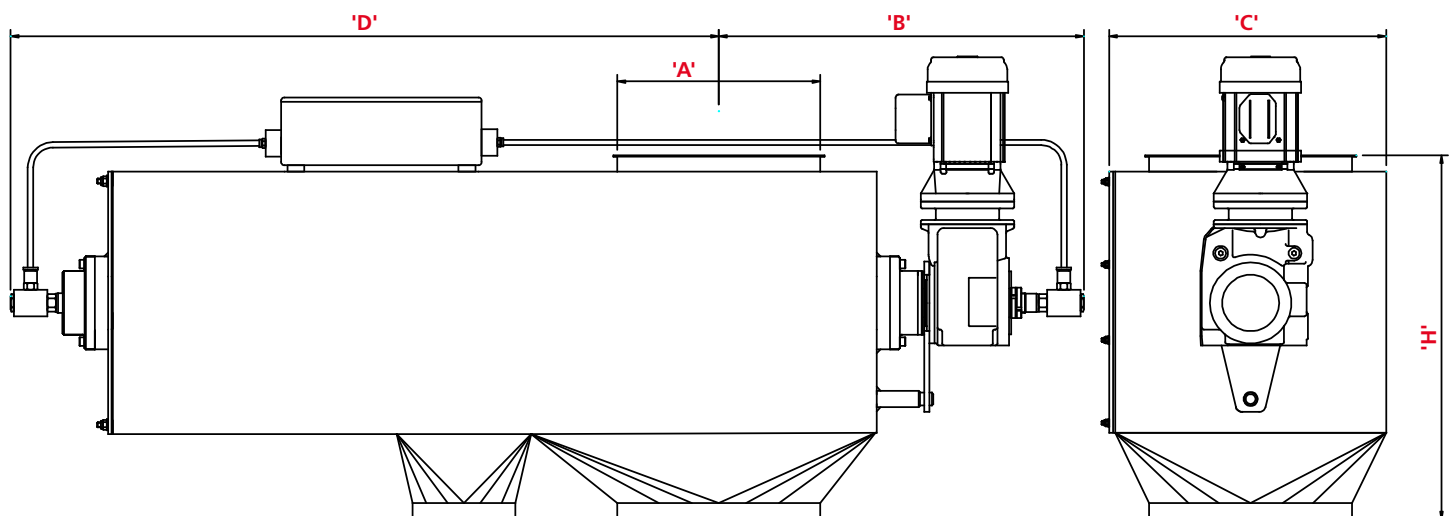
Housing	316 grade stainless steel
Tubing	316 grade stainless steel - Aerospace Quality
Other Parts	316 grade stainless steel
Surface finish	Brushed internally / externally to 1.2µm
Sealing	Self adhered white foam
PLC	Crouzet, pre-programmed

Options

- High temperature Samarium Cobalt magnetic material (+220°C)
- Siemens, Mitsubishi or Allen Bradley PLC
- 304 grade stainless steel
- Pharmaceutical specification
- ATEX certified
- Flanged to suit
- Metal detectable silicon rubber seal – dark blue, FDA approved



Part Number	Inlet / Outlet A mm	B mm	C mm	D mm	H mm	kW rating	Number of Rods	Weight kg
Round								
ASRG150	150	475	250	815	400	0.18	5	90
ASRG200	200	500	300	915	450	0.18	6	105
ASRG250	250	525	350	1015	500	0.18	7	120
ASRG300	300	550	400	1115	550	0.18	9	135
ASRG350	350	575	450	1215	600	0.25	10	150
ASRG400	400	600	500	1315	650	0.25	13	165
ASRG450	450	625	550	1415	700	0.25	15	180
Square								
ASRG1515	150	475	250	815	400	0.18	5	88
ASRG2020	200	500	300	915	450	0.18	6	100
ASRG2525	250	525	350	1015	500	0.18	7	112
ASRG3030	300	550	400	1115	550	0.18	9	126
ASRG3535	350	575	450	1215	600	0.25	10	142
ASRG4040	400	600	500	1315	650	0.25	13	155
ASRG4545	450	625	550	1415	700	0.25	15	168



Pneumag

High Intensity — Rare Earth **Secondary Protection**

Introduction

Our Pneumag high intensity magnetic separator has been designed to operate in lean / dilute conveying lines to provide protection against ferrous and para-magnetic contamination. The unit contains a single double row high intensity magnetic cartridge. It is secured into its housing by quick release toggle clamps, which ensure even pressure is generated around the unique silicon-based metal-detectable seal.

The Pneumag can be incorporated into any form of pneumatic conveying line, from lean to dense phase, and can be installed at any angle from vertical to horizontal. A common installation location is at tanker discharge to inspect incoming materials.

All dry powders and granular type materials can be processed through the unit. Pneumag can operate in line pressures of 1 bar, units are available up to 5 bar on request, with a maximum processing line speed of 35m/sec.

A lockable tamper proof cover plate is provided to ensure only authorised personnel have access to the unit.

Cleaning

The Pneumag uses our 'easy clean' system. To clean, simply release the quick release toggle clamps, remove the contaminated cartridge from the housing and then remove the magnetic cores from the tube assembly. All attracted contamination will be released allowing for inspection or further analysis.

Suitable Products

Dry powders and granulates.

Suitable Locations

All.

Benefits

- Easy to clean
- Tamper proof guard
- Metal detectable seal
- Reduces 'spark' risk
- Removes sub-micron sized contaminants
- Meets audit requirements
- Rare earth 7,000, 9,000, 10,000, 11,000 and 12,000 Gauss options





Technical Data

Performance

Magnetic performance	7,000*, 9,000, 10,000, 11,000 and 12,000 Gauss
Performance reading	On tube surface
Magnetic material	Rare Earth Neodymium Iron Boron
Magnet grade	N45 – Inspected and confirmed via hystero-graph prior to use
Temperature	-20°C / +60°C
Pressure	+ / - 1 Bar

*7,000 Gauss should be selected for bread flour applications to allow for permissible iron oxide

Material

Housing	316 grade stainless steel
Tubing	316 grade stainless steel - Aerospace Quality
Other Parts	316 grade stainless steel
Surface finish	Brushed internally / externally to 1.2µm
Sealing	Metal detectable silicon rubber – dark blue, FDA approved
Toggle Clamps	Mild steel – Bright Zinc plated

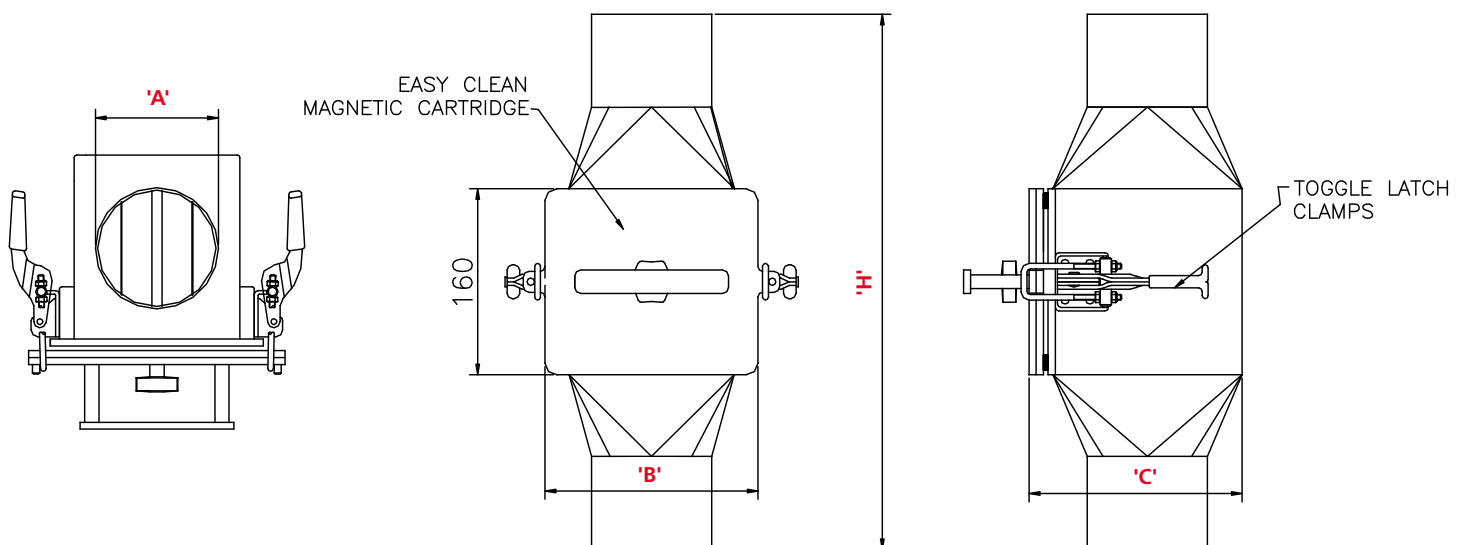
Options

- Stainless steel toggle clamps
- High temperature Samarium Cobalt magnetic material (+220°C)
- Overpressure to + / - 5 Bar
- 304 grade stainless steel
- Double magnetic core arrangement
- ATEX certified
- Pharmaceutical specification
- Safety relay switch
- Flanged to suit



Part Number	A mm	B mm	C mm	H mm	Number of Rods	Weight kg
PNEU50	50	150	132	460	3	8
PNEU75	75	180	180	460	4	11
PNEU100	100	180	180	460	4	11
PNEU125	125	240	220	500	6	18
PNEU150	150	240	220	500	6	18
PNEU175	175	290	272	500	8	24
PNEU200	200	290	272	500	8	24

Other part sizes available upon request.



Liquid Filter

High Intensity — Rare Earth **Secondary Protection**

Introduction

Our high intensity liquid filter magnetic separator has been designed to operate in pressurised transfer lines to provide protection against ferrous and para-magnetic contamination.

The housing comprises a vessel, magnetic lid assembly and band clamp, which secures the unit together. The filter is available in two versions, single wall and double wall (jacketed for heated pipelines).

The filter can be used in any line that processes liquids at all viscosity levels and can be installed at any angle from vertical to horizontal. A common installation location is tanker loading and discharge to inspect outgoing and incoming materials.

The filter can be supplied to suit various processing volumes, pressures, temperatures and specifications.

Cleaning

The filter uses our 'easy clean' system.

To clean, simply release the quick release band clamp, remove the contaminated cartridge from the housing and remove the magnetic cores from the tube assembly. All attracted contamination can be easily removed allowing for inspection or further analysis.

Suitable Products

Chocolate, molasses, jam, syrup, juice, sauce, pastes, soup, pickles, spreads, beverages etc.

Suitable Locations

All, vertical, horizontal or angled.

Benefits

- Easy to clean
- Removes sub-micron sized contaminants
- Meets audit requirements
- Rare earth 7,000, 9,000, 10,000, 11,000 and 12,000 Gauss - Easy clean or Fixed
- No consumables
- No pressure drop





Technical Data

Performance

Magnetic performance	7,000, 9,000, 10,000, 11,000 and 12,000
Performance reading	On tube surface
Magnetic material	Rare Earth Neodymium Iron Boron
Magnet grade	N45 – Inspected and confirmed via hystero-graph prior to use
Temperature	-20°C / +90°C
Pressure	+ / - 6 Bar

Material

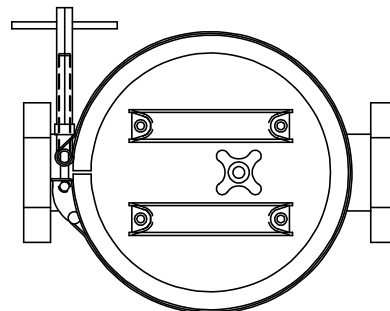
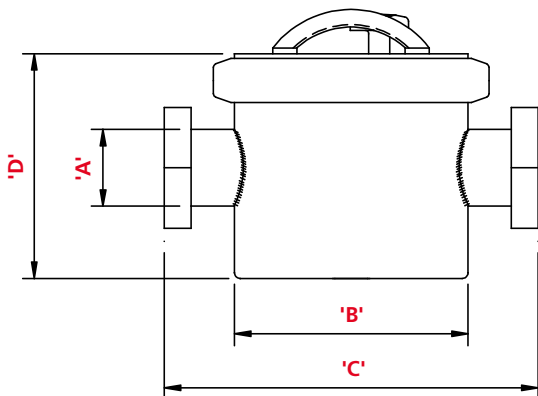
Housing	316 grade stainless steel
Tubing	316 grade stainless steel - Aerospace quality
Other Parts	316 grade stainless steel
Surface finish	Brushed internally / externally to 1.2µm
Sealing	Silicon rubber O-ring, brown
Band Clamp	304 grade stainless steel

Options

- High temperature Samarium Cobalt magnetic material (+220°C)
- 11,000 and 12,000 Gauss fixed design
- Stainless steel handles
- Overpressure to 30 Bar
- 304 grade stainless steel
- Pharmaceutical specification
- ATEX certified
- Flanged to suit
- Safety relay switch



Part Number	Spout Dia. A mm	Dia. B mm	C mm	D mm	Number of Rods	Weight kg
Single Wall						
ILF200/50	50	200	350	200	7	22
ILF200/75	75	200	350	200	7	22
ILF300/50	50	300	450	300	9	36
ILF300/75	75	300	450	300	9	36
ILF300/100	100	300	450	300	9	36
Jacketed						
ILF200/50/J	50	200	350	200	7	22
ILF200/75/J	75	200	350	200	7	22
ILF300/50/J	50	300	450	300	9	36
ILF300/75/J	75	300	450	300	9	36
ILF300/100/J	100	300	450	300	9	36



Strip Magnet

High Intensity — Rare Earth **Primary Protection**



Introduction

Rare earth strip magnets are versatile and can be used in various processes. These units are usually installed above transfer conveyors and vibratory feeders to attract 'tramp' type contamination and any loose machinery that has fallen off during the manufacturing or packaging stages.

The unit consists of two rows of magnetic material running the full length of the unit. These generate high intensity magnetic flux fields, which reach approximately 85mm from the units front face. Magnetism is only present on one face ensuring that no surrounding sensitive process machinery is affected. 'Tramp' contamination can be attracted from the conveyor surface even when trapped underneath the product e.g. biscuit etc. The unit's full stainless steel construction means water and chemical clean down can be carried out.

Cleaning

The strip magnet is highly visible once installed and any attracted contamination can be easily seen. In most cases this contamination can be removed by hand. In high collection installations a simple scraper can be used. Working with the maintenance department, any attracted machinery parts can be quickly identified and corrective maintenance carried out.

Suitable Products

All conveyed products less than 85mm thick.

Suitable Locations

Above transfer belt conveyors and vibratory feeders.

Benefits

- Suitable for wash down
- High collection capacity
- Removes 'tramp' sized contaminants
- Rare earth deep magnetic field
- Easy to clean



Technical Data

Performance

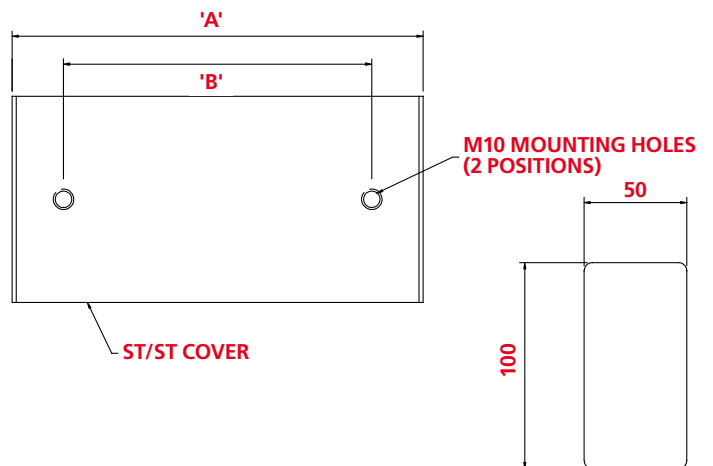
Magnetic performance	4,000 Gauss
Performance reading	On magnetic front face
Magnetic field depth	85mm – Using 5mm Ø 25mm long mild steel test piece
Magnetic material	Rare Earth Neodymium Iron Boron
Magnet grade	N35 – Inspected and confirmed via hysteresograph prior to use
Temperature	-20°C / +90°C

Material

Housing	304 grade stainless steel
Other parts	304 grade stainless steel
Surface finish	Brushed to 2.0µm

Options

- High temperature Samarium Cobalt magnetic material (+220°C)
- Length up to 2000mm long
- 316 grade stainless steel
- ATEX certified
- Ceramic magnetic material
- Pharmaceutical specification



Part Number	A mm	B mm	No. Of Holes	Weight kg
SMN100	100	50	2	2.5
SMN200	200	150	2	5.0
SMN300	300	200	2	7.5
SMN400	400	200	2	10.0
SMN500	500	200	3	12.5
SMN600	600	200	3	15.0
SMN700	700	200	4	17.5
SMN800	800	200	4	20.0
SMN900	900	200	5	22.5
SMN1000	1000	200	5	25.0

Hinged Strip Magnet

High Intensity — Rare Earth **Primary Protection**



Introduction

Rare earth hinged strip magnets are versatile and can be used in various processes. These units are usually installed above transfer conveyors and vibratory feeders to attract 'tramp' type contamination and any loose machinery that has fallen off during manufacturing or packaging stages.

The unit has two rows of magnetic material running along its length. They generate high intensity magnetic flux fields, which reach approximately 85mm from the units front face. The unit is designed so that magnetism is only present on one face ensuring that no surrounding sensitive process machinery is affected. 'Tramp' contamination can be attracted from the conveyor surface even when trapped underneath the product e.g. biscuit etc. The unit's full stainless steel construction means water and chemical clean down can be carried out.

Cleaning

Simply place the supplied collection tray underneath the magnet and hinge the magnetic pack away. This releases all attracted contamination into the tray. Any attracted machinery parts can be quickly identified and corrective maintenance carried out.

Suitable Products

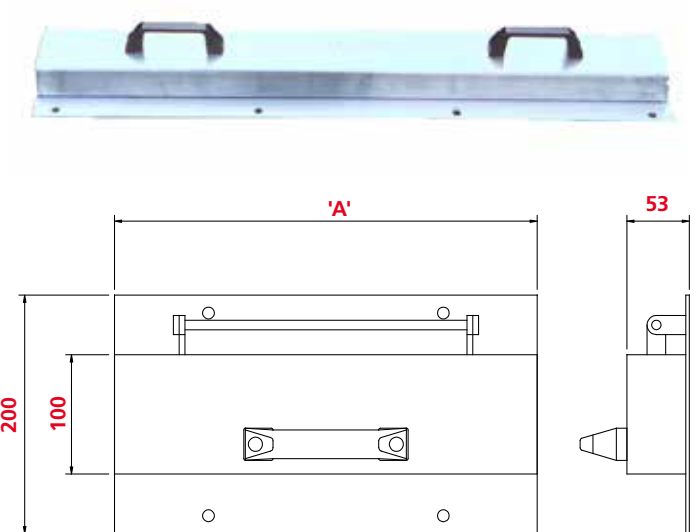
All conveyed products less than 85mm thick.

Suitable Locations

Above transfer belt conveyors and vibratory feeders.

Benefits

- Suitable for wash down
- High collection capacity
- Removes 'tramp' sized contaminants
- Rare earth deep magnetic field
- Easy to clean



Technical Data

Performance

Magnetic performance	4,000 Gauss
Performance reading	On magnetic front face
Magnetic field depth	85mm – Using 5mm Ø 25mm long mild steel test piece
Magnetic material	Rare Earth Neodymium Iron Boron
Magnet grade	N35 – Inspected and confirmed via hysteresograph prior to use
Temperature	-20°C / +90°C

Material

Housing	304 grade stainless steel
Other parts	304 grade stainless steel
Surface finish	Brushed to 2.0µm

Options

- High temperature Samarium Cobalt magnetic material (+220°C)
- Length up to 2000mm long
- 316 grade stainless steel
- ATEX certified
- Ceramic magnetic material
- Pharmaceutical specification

Part Number	A mm	Weight kg
HSM300	300	9.5
HSM400	400	12.0
HSM500	500	15.5
HSM600	600	19.0
HSM700	700	23.5
HSM800	800	27.0
HSM900	900	30.5
HSM1000	1000	36.0

Underflow Magnet

High Intensity — Rare Earth **Primary Protection**



Introduction

Our high intensity underflow magnet has been designed to operate in arduous conditions and where contamination size is relatively large e.g. nuts, bolts etc. The unit incorporates two magnetic poles which generate high intensity magnetic fields. The unit is secured to the chute by a hinge and toggle clamp arrangement. The toggle clamps ensure even pressure is generated around the seal to prevent any product leakage.

The underflow magnet can be incorporated into any form of angled pipe or chute section. A common installation location is raw material inlet points for products such as grain, rice, corn, bran and animal feed etc. Two catchment areas ensure that attracted contamination cannot be 'washed off'. As the magnet is usually installed in angled chute sections, any processed products of any size can be passed over the top of the magnet. Safety interlocks can be fitted to the magnet to stop the process should it be accidentally opened.

Cleaning

Underflow magnets are very easy to clean. Simply release the two securing toggle clamps and allow the magnet to swing away under its own weight, this will give access to the magnetic face. All attracted contamination can now be removed by a gloved hand or scraper tool.

Suitable Products

Dry and semi dry powders, granulates and lumps etc.

Suitable Locations

All angled chute sections.

Benefits

- Easy to clean
- Maintains full flow
- High collection capacity
- Reduces 'spark' risk
- Removes 'tramp' sized contaminants
- Meets audit requirements
- Rare earth deep magnetic field



Technical Data

Performance

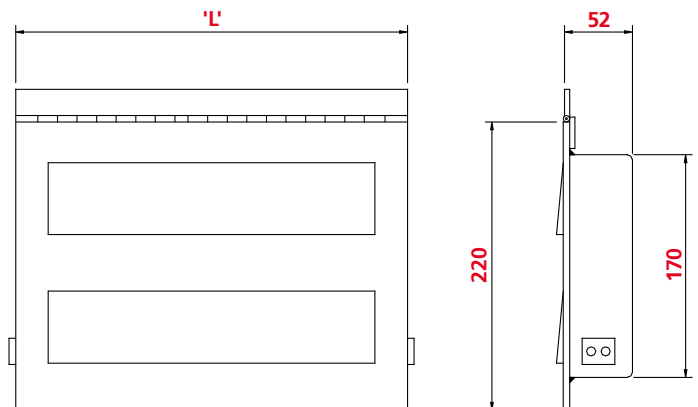
Magnetic performance	3,500 Gauss
Performance reading	On magnetic front face surface
Magnetic material	Rare Earth Neodymium Iron Boron
Magnet grade	N35 – Inspected and confirmed via hystero-graph prior to use
Temperature	-20°C / +90°C

Material

Housing	316 grade stainless steel
Other Parts	316 grade stainless steel
Surface Finish	Brushed Finish
Hinge	304 grade stainless steel
Toggle Clamps	Zinc plated mild steel

Options

- High temperature Samarium Cobalt magnetic material (+220°C)
- Sizes up to 2000mm long
- 304 grade stainless steel
- ATEX certified
- Ceramic magnetic material
- Pharmaceutical specification
- Stainless steel toggle clamps



Part Number	L mm	Weight kg
UFM200	200	10
UFM250	250	13
UFM300	300	15
UFM350	350	17
UFM400	400	20
UFM450	450	23
UFM500	500	27

Housed Underflow Magnet

High Intensity — Rare Earth **Primary Protection**



Introduction

The housed underflow magnet is available with a single or double underflow magnet array. They are suitable for installation into vertical, horizontal and inclined gravity feed chutes. Our high intensity underflow magnet has been designed to operate in arduous conditions and where contamination size is relatively large e.g. nuts, bolts etc. The unit incorporates two magnetic poles which generate high intensity magnetic fields. The unit is secured to the chute by a hinge and toggle clamp arrangement. The toggle clamps ensure even pressure is generated around the seal to prevent any product leakage.

The housed underflow magnet can be incorporated into any form of angled pipe or chute section. A common installation location is raw material inlet points for products such as grain, rice, corn, bran and animal feed etc. Two catchment areas ensure that attracted contamination cannot be 'washed off'. As the magnet is usually installed in angled chute sections, any processed products of any size can be passed over the top of the magnet. Safety interlocks can be fitted to the magnet to stop the process should it be accidentally opened.

Cleaning

Underflow magnets are very easy to clean. Simply release the two securing toggle clamps and allow the magnet to swing away under its own weight, this will give access to the magnetic face. All attracted contamination can now be removed by a gloved hand or scraper tool.

Suitable Products

Dry and semi dry powders, granulates and lumps etc.

Suitable Locations

All angled chute sections.

Benefits

- Easy to clean
- Maintains full flow
- High collection capacity
- Reduces 'spark' risk
- Removes 'tramp' sized contaminants
- Meets audit requirements
- Rare earth deep magnetic field



Single

Part Number	Inlet / Outlet A	Length B mm	Width C mm	Thickness D mm
HUFS/50	50mm / 2"	440	150	90
HUFS/75	75mm / 3"	440	150	90
HUFS/100	100mm / 4"	440	150	90
HUFS/125	125mm / 5"	490	200	90
HUFS/150	150mm / 6"	490	200	90
HUFS/200	200mm / 8"	540	250	125

Double

Part Number	Inlet / Outlet A	Length B mm	Width C mm	Thickness D mm
HUFD/50	50mm / 2"	635	150	90
HUFD/75	75mm / 3"	635	150	90
HUFD/100	100mm / 4"	635	150	90
HUFD/125	125mm / 5"	735	200	90
HUFD/150	150mm / 6"	735	200	90
HUFD/200	200mm / 8"	835	250	125

Options

- High temperature Samarium Cobalt magnetic material (+220°C)
- Sizes up to 2000mm long
- 304 grade stainless steel
- ATEX certified
- Pharmaceutical specification
- Stainless steel toggle clamps

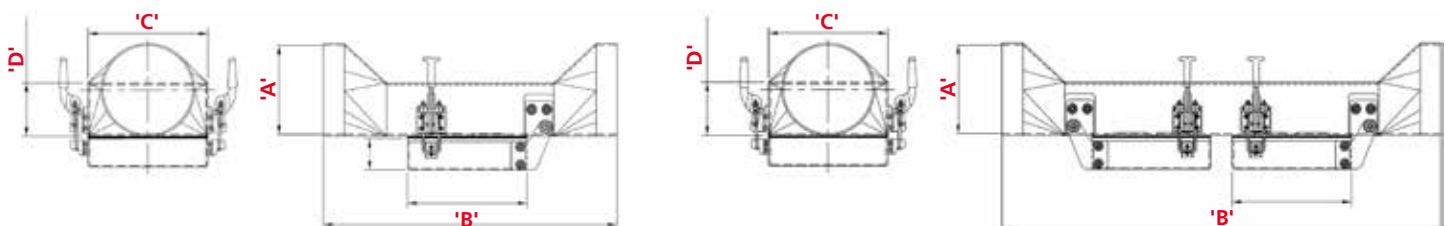
Technical Data

Performance

Magnetic performance	3,500 Gauss
Performance reading	On magnetic front face surface
Magnetic material	Rare earth neodymium iron boron
Magnet grade	N35 – Inspected and confirmed via hysteresograph prior to use
Temperature	-20°C / +90°C

Material

Housing	316 grade stainless steel
Other Parts	316 grade stainless steel
Surface Finish	Brushed Finish
Hinge	304 grade stainless steel
Toggle Clamps	Zinc plated mild steel



Bullet Magnet

High Intensity — Rare Earth **Primary Protection**

Introduction

Housed bullet magnets are ideal for the removal of tramp type contamination, for example nuts, bolts, staples etc., from gravity and pneumatically conveyed pipelines. The unit is designed to prevent tramp iron from damaging expensive process machinery such as blenders, granulators, mixers and screw feed conveyors. A high intensity magnetic bullet element is centrally mounted within a stainless steel housing. The design ensures that product flow is unaffected by the magnetic element.

The bullet element incorporates high intensity rare earth magnetic material which generates deep penetrating magnetic flux fields which ensure contamination is captured. The angled nose cone assists in maintaining product integrity and full flow during processing. All dry powders and granular type materials can be processed through the unit. Electrical safety interlocks can be fitted to the magnetic packs to stop the process should they be accidentally opened.

Cleaning

It is cleaned by hand. Simply release the door securing toggle clamps and open the door to gain access to the bullet element. All attracted contamination can now be removed. It is advisable to wear protective gloves to avoid any injuries from sharp attracted items.

Suitable Products

Dry powders and granulates, grain and 'lumpy' products.

Suitable Locations

Inlet / outlet points

Benefits

- Easy to inspect
- Maintains full flow
- High collection capacity
- Reduces 'spark' risk
- Removes 'tramp' sized contaminants
- Meets audit requirements
- Rare earth deep magnetic field



Technical Data

Performance

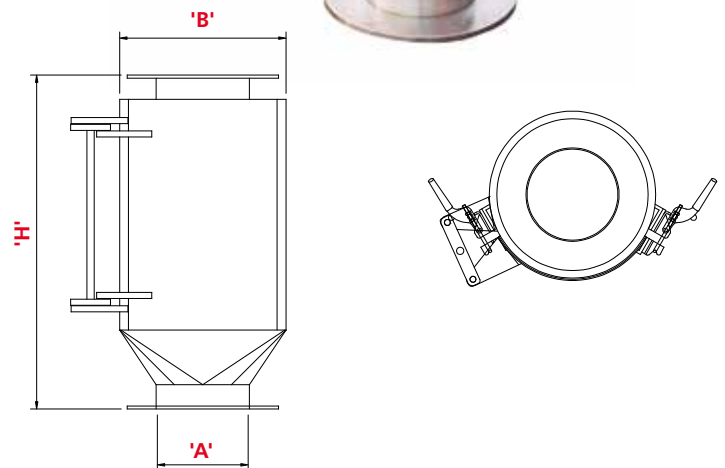
Magnetic performance	9,000 Gauss
Performance reading	On magnetic pole surface
Magnetic material	Rare Earth Neodymium Iron Boron
Magnet grade	N35 – Inspected and confirmed via hysteresograph prior to use
Temperature	-20°C / +90°C
Pressure	+ / - 0.8 Bar

Materials

Housing	304 grade stainless steel
Other Parts	304 grade stainless steel
Surface finish	Bead blast
Sealing	Self adhered white foam
Toggle Clamps	Mild steel – bright zinc plated

Options

- Stainless steel toggle clamps
- High temperature Samarium Cobalt magnetic material (+220°C)
- Sizes up to 500mm Ø
- Metal detectable silicon rubber seal – dark blue, FDA approved
- 316 grade stainless steel
- Flanged to suit
- Safety relay switches
- Ceramic magnetic material



Part Number	Inlet / Outlet A mm	ø Dia B mm	Height H mm	Weight kg
HBM075	75	200	490	16
HBM100	100	225	490	22
HBM125	125	250	550	33
HBM150	150	275	550	46
HBM175	175	300	640	60
HBM200	200	325	640	105
HBM250	250	375	710	160
HBM300	300	425	710	210

Chute Magnet

High Intensity — Rare Earth **Primary Protection**



Introduction

Our high intensity magnetic chute magnet has been designed to operate in arduous conditions and where contamination size is relatively large e.g. nuts, bolts etc.

The unit has two hinged, high intensity magnetic packs, which are secured to a housing by an adjustable hinge arrangement and tri-cone locking nut. These tri-cone nuts ensure even pressure is generated around the food grade silicon seal.

The chute magnet can be incorporated into any form of vertical or angled pipe or chute section. A common installation location is raw material inlet points for products such as grain, rice, corn, bran and animal feed etc. A central diverter is mounted on the inlet. This directs processed product onto the magnetic face ensuring a high contamination removal rate. All dry powders and granular type materials can be processed through the unit. Electrical safety interlocks can be fitted to the magnetic packs to stop the process should they be accidentally opened.

Cleaning

The chute magnet uses our 'easy clean' system. Simply release the quick-release toggle clamps, swing the packs away from the line and hinge the easy clean plates away. The collected contamination will be free from magnetic attraction and can be simply and easily removed allowing for inspection or further analysis.

Suitable Products

Dry powders and granulates.

Suitable Locations

Inlet / outlet points.

Benefits

- Easy to clean
- Maintains full flow
- High collection capacity
- Reduces 'spark' risk
- Removes 'tramp' sized contaminants
- Meets audit requirements
- Rare earth deep magnetic field



Technical Data

Performance

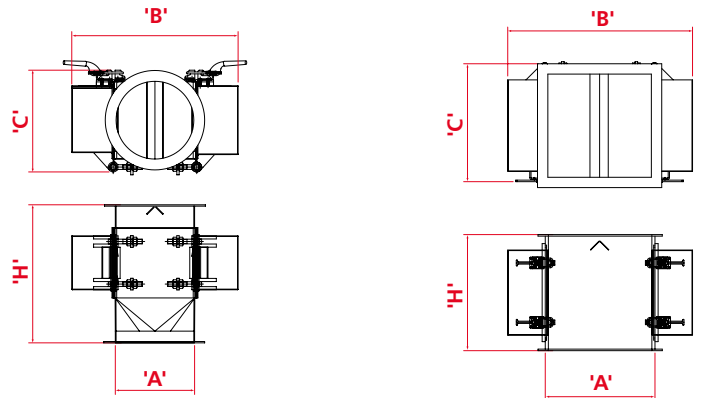
Magnetic performance	3,500 Gauss
Performance reading	On magnetic pack surface
Magnetic material	Rare Earth Neodymium Iron Boron
Magnet grade	N35 – Inspected and confirmed via hysteresis prior to use
Temperature	-20°C / +60°C
Pressure	+ / - 0.2 Bar

Material

Housing	316 grade stainless steel
Other Parts	316 grade stainless steel
Surface finish	Brushed internally / externally to 1.2µm
Sealing	Self adhered white foam
Toggle Clamps	Mild steel – bright zinc plated

Options

- Stainless steel toggle clamps
- High temperature Samarium Cobalt magnetic material (+220°C)
- Overpressure to + / - 5 Bar
- 304 grade stainless steel
- ATEX certified
- Safety relay switches
- Metal detectable silicon rubber seal – dark blue, FDA approved
- Sizes up to 500mm Ø or square
- Pharmaceutical specification
- Flanged to suit
- Ceramic magnetic material



Part Number	Inlet / Outlet A mm	B mm	C mm	H mm	Weight kg
Round					
CMN150	150	350	250	270	24
CMN200	200	400	300	300	32
CMN250	250	450	350	400	42
CMN300	300	500	400	450	56
Square					
CMN1515	150	330	220	200	22
CMN2020	200	380	270	250	30
CMN2525	250	450	320	300	39
CMN3030	300	500	370	350	52

Drum Magnet

High Intensity — Rare Earth **Primary Protection**

Introduction

Our high intensity drum magnet is ideal for the continuous removal of tramp ferrous contamination from any dry bulk material and is regularly installed in the most arduous of environments. Drums should be fitted at the discharge end of conveyors or vibratory feeders. High performance rare earth magnets are incorporated within a stainless steel wear resistant drum shell. Cleaning is continuous: the drum rotates taking contamination away from the static magnets. Units are available for all product volume flows ranging from 5–500m³/hr and a contamination loading of up to 50% of the total product volume.

Cleaning

The processed product is fed over the drum surface where any contamination is attracted. As the drum rotates, carry-over fins move the contamination to the rear of the drum where the magnetic area ends where the contamination falls in the opposite direction of the material being processed. The drum rotates at between 20–25 RPM ensuring that even the most heavily contaminated product can be separated.

Suitable Products

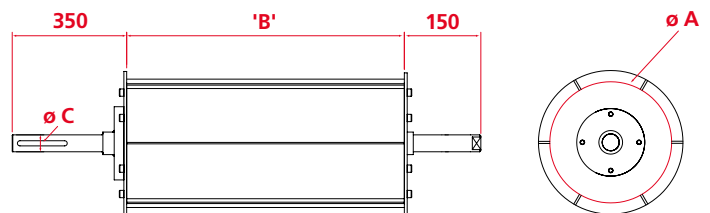
Dry powders, granulates, grain and sand etc.

Suitable Locations

End of conveyor belt, vibratory feeder or in-line chute sections.

Benefits

- Continuous self cleaning
- Allows difficult products to be screened
- High volume capacity
- Reduces 'spark' risk
- Removes large to medium sized contamination



Technical Data

Performance

Magnetic performance	Rare earth 3,500 Gauss
Magnetic material	Rare Earth Neodymium Iron Boron
Magnetic field depth	215mm Dia. = 85mm
	315mm Dia. = 100mm
	400mm Dia. = 150mm*
Temperature	-20°C / +80°C

Material

Drum Shell	304 grade stainless steel
Surface finish	Bead Blasted

Options

- High temperature Samarium Cobalt magnetic material (+220°C)
- 316 grade stainless steel
- ATEX certified

*Mild steel test piece 5mm ø x 25mm long

Part Number	Diameter A mm	B mm	Diameter C mm	Weight kg
DMN2140	215	400	30	60
DMN2150	215	500	30	72
DMN2160	215	600	30	84
DMN2170	215	700	30	96
DMN2180	215	800	30	108
DMN2190	215	900	30	120
DMN21100	215	1000	40	132
DMN3140	315	400	40	82
DMN3150	315	500	40	84
DMN3160	315	600	40	108
DMN3170	315	700	40	122
DMN3180	315	800	40	136
DMN3190	315	900	40	150
DMN31100	315	1000	40	154
DMN4040	400	400	50	125
DMN4050	400	500	50	140
DMN4060	400	600	50	155
DMN4070	400	700	50	170
DMN4080	400	800	50	185
DMN4090	400	900	50	200
DMN40100	400	1000	50	215

Housed Drum Magnet

High Intensity — Rare Earth **Primary Protection**



Introduction

Our high intensity housed drum magnet is ideal for the continuous removal of tramp ferrous contamination from any dry bulk material. It is regularly installed in the most arduous of environments. Housed drums should be fitted at the discharge end of conveyors, vibratory feeders or in-line chute sections. High performance rare earth magnets are contained within a stainless steel wear-resistant drum shell. Cleaning is continuous: the drum rotates taking contamination away from the static magnets.

Cleaning

Contamination entering the housing is fed onto the drum surface where it is attracted. As the drum rotates, carry-over fins move the contamination to the rear of the drum, where the magnetic area ends, and out of the magnetic field. It then falls through the reject chute section of the housing. The drum rotates at between 20–25 RPM ensuring that even the most heavily contaminated product can be separated.

Suitable Products

Dry powders, granulates, grain and sand etc.

Suitable Locations

End of conveyor belt, vibratory feeder or in-line chute sections.

Benefits

- Continuous self cleaning
- Allows difficult products to be screened
- High volume capacity
- Reduces 'spark' risk
- Removes large to medium sized contamination



Technical Data

Performance

Magnetic performance Rare earth 3,500 Gauss
 Magnetic material Rare Earth Neodymium Iron Boron
 Magnetic field depth 215mm Dia. = 85mm
 315mm Dia. = 100mm;
 400mm Dia. = 150mm*
 Temperature -20°C / +80°C

Material

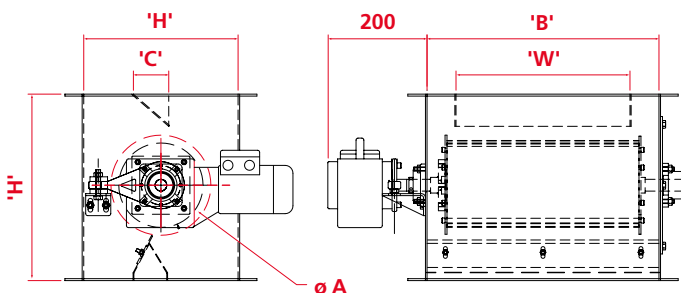
Housing 304 grade stainless steel
 Drum Shell 304 grade stainless steel - Aerospace Quality
 Electrical Spec 415 / 380 Volts industrial three phase
 IP54 rated motor gearbox
 Surface finish Bead Blasted
 Sealing Self adhered white foam

Options

- High temperature Samarium Cobalt magnetic material (+220°C)
- Overpressure to +/- 5 Bar
- 316 grade stainless steel

Part Number	ø A mm	B mm	C mm	D mm	W mm	H mm	Weight kg
HDMN2140	215	500	75	400	350	475	125
HDMN2150	215	600	75	400	450	475	135
HDMN2160	215	700	75	400	550	475	150
HDMN2170	215	800	75	400	650	475	165
HDMN2180	215	900	75	400	750	475	185
HDMN2190	215	1000	75	400	850	475	210
HDMN21100	215	1100	75	400	950	475	235
HDMN3140	315	500	125	500	350	650	150
HDMN3150	315	600	125	500	450	650	160
HDMN3160	315	700	125	500	550	650	175
HDMN3170	315	800	125	500	650	650	200
HDMN3180	315	900	125	500	750	650	220
HDMN3190	315	1000	125	500	850	650	245
HDMN31100	315	1100	125	500	950	650	275
HDMN4040	400	500	175	585	350	750	185
HDMN4050	400	600	175	585	450	750	205
HDMN4060	400	700	175	585	550	750	220
HDMN4070	400	800	175	585	650	750	240
HDMN4080	400	900	175	585	750	750	265
HDMN4090	400	1000	175	585	850	750	290
HDMN40100	400	1100	175	585	950	750	315

*Mild steel test piece 5mm ø x 25mm long



Permanent Magnet Head Roller

High Intensity — Rare Earth **Primary Protection**

Introduction

Installed at the discharge end of flat or troughed belt conveyors, permanent magnetic head rollers are designed to remove tramp iron that cannot be removed by either a plate or overband magnet because of the conveyed product depth. For the best possible protection against tramp metals use permanent magnetic head rollers in conjunction with plate or overband magnets. Permanent magnetic head rollers are available in two magnetic materials: standard strength, which uses ceramic magnetic material; and high strength, which uses high intensity rare earth magnetic material. The latter is the most popular due to its high contamination removal efficiency.

Cleaning

The unit is continuously self cleaning. Contamination enters the roller's magnetic field where it is attracted and held firmly on the belt. When it reaches the underside it passes out of the magnetic field and is discharged separately from the conveyed product, which continues on its normal trajectory.

Suitable Products

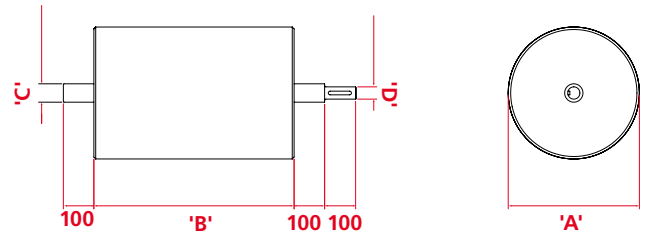
All conveyable products, wood chip, biomass, recyclables, aggregates, coal etc.

Suitable Locations

Conveyor head roller.

Benefits

- Allows difficult products to be screened
- High volume capacity
- Designed for 24 / 7 operation
- Removes large to medium sized contamination
- Continuously cleans
- No running costs



Technical Data

Performance

Magnetic performance	3,000 Gauss
Performance reading	On roller surface
Magnetic material	Rare Earth Neodymium Iron Boron
Magnet grade	N35 – Inspected and confirmed via hysteresis graph prior to use
Magnetic field depth	200 Series = 75mm* 300 Series = 100mm* 400 Series = 125mm*
Temperature	-40°C / +80°C

Material

Cover	304 grade stainless steel
Back plate	Painted mild steel
Shaft	Mild steel

Options

- Ceramic magnetic material
- Rubber lagged diamond cut cover
- Crowded detail
- Protective paint coating

Part Number	ø A mm	B mm	Diameter C mm	Diameter D mm	Weight kg
200 Series					
HRN2140	215	400	40	30	70
HRN2150	215	500	40	30	80
HRN2160	215	600	40	30	95
HRN2170	215	700	40	30	110
HRN2180	215	800	40	30	130
HRN2190	215	900	40	30	145
HRN21100	215	1000	40	30	160
300 Series					
HRN3140	315	400	50	40	110
HRN3150	315	500	50	40	130
HRN3160	315	600	50	40	150
HRN3170	315	700	50	40	170
HRN3180	315	800	50	40	190
HRN3190	315	900	50	40	210
HRN31100	315	1000	50	40	230
400 Series					
HRN4040	400	400	60	50	220
HRN4050	400	500	60	50	260
HRN4060	400	600	60	50	300
HRN4070	400	700	60	50	340
HRN4080	400	800	60	50	380
HRN4090	400	900	60	50	420
HRN40100	400	1000	60	50	460

*Mild steel test piece 5mm ø x 25mm long

Permanent Plate Magnet

High Intensity — Rare Earth **Primary Protection**



Introduction

Permanent plate magnets are used in recycling, quarrying and heavy industries. These units can be placed above flat or trough type conveyors. Large permanent magnetic packs generate deep penetrating magnetic flux fields that attract and remove 'tramp' type steel items. This unit is considerably less expensive than electro-magnetic units and, as it has no running costs other than cleaning, much cheaper to run. When considering installation points it should be noted that steel belt support rollers will need to be changed to non-magnetic ones due to possible flux field absorption. For heavily contaminated materials consider the self cleaning permanent magnetic overband.

Cleaning

The magnetism cannot be switched off so cleaning has to be done manually using either a scraper tool or gloved hand. To aid cleaning, plate magnets can be supplied with a sliding cleaning plate.

Suitable Products

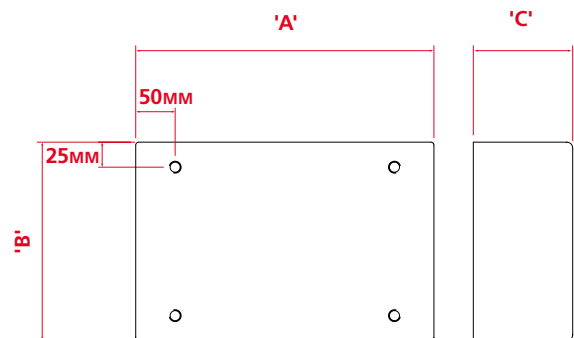
All conveyable products, wood chip, biomass, recyclables, aggregates, coal etc.

Suitable Locations

Above transfer conveyors, vibratory feeder outlets etc.

Benefits

- Allows difficult products to be screened
- High volume capacity
- Designed for 24 / 7 operation
- Removes large to medium sized contamination



Technical Data

Performance

Magnetic material	Ceramic strontium ferrite
Magnetic field depth	100 Series = 100mm*
	200 Series = 200mm*
	300 Series = 300mm*
Temperature	-40°C / +80°C

Material

Cover	304 grade stainless steel
Back plate	Painted mild steel
Lifting points	Four threaded holes

Options

- Sliding cleaning plate
- Full stainless steel cover
- Forged lifting eyes
- Protective paint coating

*Mild steel test piece 5mm ϕ x 25mm long



Part Number	Length A mm	Width B mm	Depth C mm	Thread	Weight kg
100 Series					
PM3020	300	200	100	M12	40
PM4020	400	200	100	M12	50
PM5020	500	200	100	M12	65
PM6020	600	200	100	M12	85
PM7020	700	200	100	M12	95
PM8020	800	200	100	M12	105
PM9020	900	200	100	M12	120
PM10020	1000	200	100	M12	135
200 Series					
PM4040	400	400	200	M16	220
PM5040	500	400	200	M16	265
PM6040	600	400	200	M16	320
PM7040	700	400	200	M16	370
PM8040	800	400	200	M16	420
PM9040	900	400	200	M16	470
PM10040	1000	400	200	M16	530
300 Series					
PM6080	600	800	300	M20	730
PM7080	700	800	300	M20	850
PM8080	800	800	300	M20	970
PM9080	900	800	300	M20	1100
PM10080	1000	800	300	M20	1200
PM12580	1250	800	300	M20	1450

Permanent Magnetic Overband

Ceramic Magnetic Material **Primary Protection**

Introduction

Permanent overband magnets are used in recycling, quarrying and heavy industries. These units can be placed above flat or trough type conveyors. Large permanent magnetic packs generate deep penetrating magnetic flux fields that attract and remove 'tramp' type steel items. This unit is considerably cheaper to purchase and run than electro-magnetic units, the only power consumption is for the geared drive.

When considering installation points it should be noted that steel belt support rollers will need to be changed to non-magnetic ones due to possible flux field absorption.

Cleaning

Overband magnets have a continuously running belt which takes away and deposits all attracted contamination. Carry-over cleats are fitted to ensure that contamination cannot remain on the belt. It can operate 24 / 7 operation without operator intervention.

Suitable Products

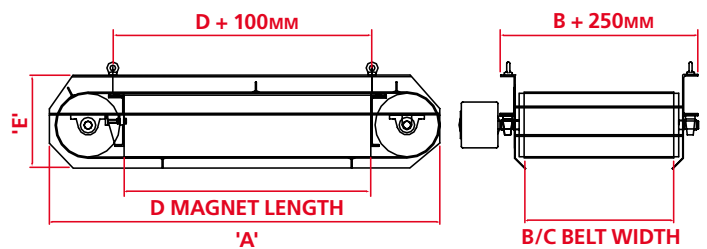
All conveyable products, wood chip, biomass, recyclables, aggregates, coal etc.

Suitable Locations

Above transfer conveyors, vibratory feeder outlets etc.

Benefits

- Continuous self cleaning
- Allows difficult products to be screened
- High volume capacity
- Designed for 24 / 7 operation
- Removes large to medium sized contamination



Technical Data

Performance

Magnetic material	Ceramic Strontium Ferrite
Magnetic field depth	100 Series = 100mm* 200 Series = 200mm* 300 Series = 300mm*
Temperature	-20°C / +60°C

Material

Frame	Powder coated mild steel
Rollers	Mild steel
Electrical Spec	415 / 380 Volts industrial three phase IP65 rated motor gearbox
Belting	Vulcanised rubber with ultrasonically welded cleats
Lifting Points	Galvanised forged steel eyes

Options

- Safety electrical interface
- Hydraulic drive motor
- Armoured belting
- Tapered rollers to enable angled operation

Part Number	A mm	B / C mm	D mm	E mm	Motor kW	Weight kg
100 Series						
OM100/300	718	350	300	125	0.18	160
OM100/450	868	350	450	125	0.18	205
OM100/550	968	350	550	125	0.18	240
OM100/650	1068	350	650	125	0.18	270
200 Series						
OM200/550	1069	600	550	345	1.00	680
OM200/650	1169	600	650	345	1.00	770
OM200/850	1419	600	850	345	1.00	820
OM200/1050	1619	600	1050	345	1.50	970
OM200/1250	1819	600	1250	345	2.20	1120
300 Series						
OM300/800	1474	800	800	460	1.50	1700
OM300/1050	1724	800	1050	460	2.20	2150
OM300/1250	1924	800	1250	460	2.20	2500
OM300/1500	2174	800	1500	460	2.20	2850
OM300/1750	2424	800	1750	460	2.20	3200

*Mild steel test piece 5mm ϕ x 25mm long

Customised Solutions

High performance Foreign Body Removal systems to bespoke specifications

Our 100 years' of magnetic expertise and our deep knowledge of processing industries enable us to work with our clients to provide the optimum solution.

If a standard product is not the answer we can offer a tailor-made solution. This could be an adaptation of a standard separation system or a complete new system. With in-house design expertise and the latest CAD and FEA software we can provide bespoke Foreign Body Removal systems in condensed lead times.

Our consultation service involves visiting your site, assessing your application or process and identifying the optimum solution. We can offer bespoke designs, different grades of magnet material, surface finishes, ancillary equipment or cleaning methods.



Pharmaceutical specification double row housed easy clean grid, pre and post sifter protection.



Housed easy clean grid with 4 rows and track system designed for large bulk flow applications.



Pneumag installed at bulk material intake, ATEX rated.



High capacity magnetic liquid filter finished to pharmaceutical specification.



Housed easy clean grid manufactured to fit an inclined gravity chute.



Easy Clean Grid Separator acts as a sack rip and tip station.

Equipment Testing & Site Surveys

Satisfy your audit requirements with our testing and validation service

Our dedicated site inspection and validation service provides the necessary information to comply with external BRC or customer audit requirements. Our site inspection service includes:

- Visual inspection of magnetic equipment
- Magnetic performance testing (by Gauss meter)
- Appraisal of installations and applications
- Issue of test certification (where pass rate achieved)
- Assessment report and recommendations

In line with HACCP procedures it is vital that critical Foreign Body Removal equipment such as magnetic separators and metal detectors are assessed annually.

The performance of magnetic equipment can vary depending on the age, design, product type or operating conditions. It is important to have annual performance tests to maintain high levels of protection.

Our dedicated mobile service team provide a comprehensive assessment and certification for audit requirements by a qualified engineer. In addition, if you take out one of equipment service contracts we will plan your service schedule and contact you when the equipment service is due and arrange a time to visit.



Gauss Meter

The Eclipse Magnetics digital Gauss Meter can be used to assess the strength of existing magnetic separation equipment either pre- or post-audit. This unit has many beneficial features and is supplied, ready to use, fully calibrated and complete with a transverse probe. Supplied in a robust carry case the meter can be used in the most arduous of environments.

Specification

- + / - 2% or 10 Gauss (whichever is the greater)
- Units, Gauss, Tesla, Ampere Metres or Oersted
- Operating temperature 0°C to +50°C
- 20 hours battery life, continual use
- LCD Display, 16 characters
- Weight 0.42 (kg)
- Size 195mm x 101mm x 44mm



The latest generation in metal detection ensures total product integrity while being easy to operate with maximum effectiveness. The range has a robust construction, a choice of multi-frequency search heads and features the interact control panel.

Forefront of Product Quality

The Artemis range provides outstanding detection performance, reliability and accuracy. It detects all ferrous and non-ferrous metals in packaged or non-packaged items. Artemis systems come complete with full operation manuals, drawing specifications, performance test samples and declarations of conformity.

Meeting Industry Standards

We are fully conversant with all major government food safety policies, such as FSA, FDA and IFS, and those of other institutes, including BRC and GFSI.

Total Customer Support

Eclipse Magnetics has a team of fully trained service engineers who can carry out on site servicing, testing and repair.



Conveyor-fed systems

Artemis TMDP and TMDC are fully integrated systems for the inspection of packaged or non-packaged product on conveyor-fed lines.

Gravity-fed systems

Artemis GFR detects contamination in powders and granular product in gravity-fed systems.

Reject Mechanisms

Artemis is available with a choice of reject mechanisms:

- Push/pull paddle
- Diverter flap
- Swing arm
- Air blast system

Sensing and Alerts

A choice of sensors and warning options are available to ensure safe operation:

- Audio alarms
- Visual beacons
- Push-button re-set
- Detector fault warnings

Tailor Made Packages

We can manufacture and build detection systems to your specific requirements. Our engineers will visit your site to assess your inspection requirements and operating conditions before suggesting the package and features required.





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While every effort has been made to ensure the accuracy of the information in this publication please note that specifications may change without notice.