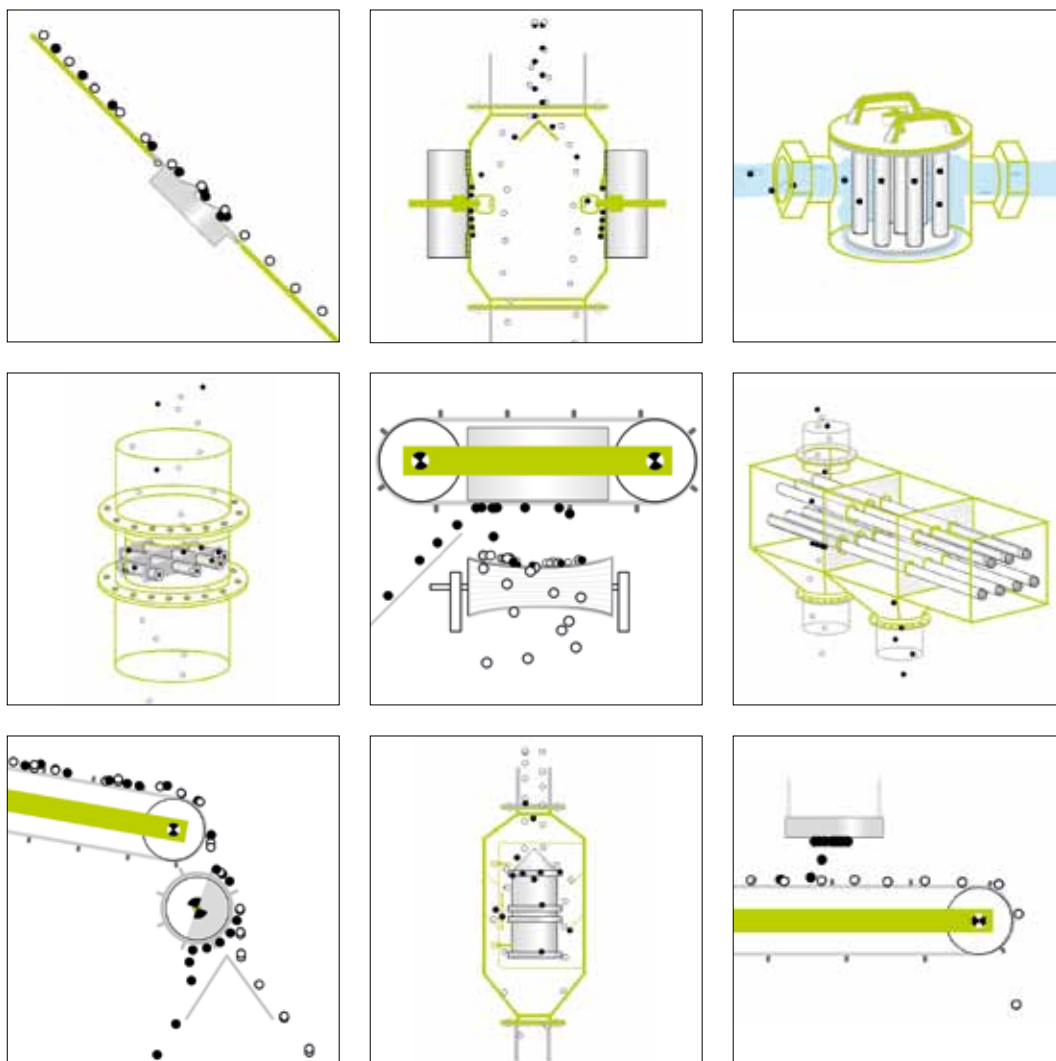




# Separation of Magnetic Metals System Catalogue









## Separation of magnetic metals

S+S is a global leader in the development and production of detection, separation, and sorting systems. Our products are used in industrial applications, both for production and for the reprocessing of recyclable materials that are reused for production.

For all applications, for all production stages, and for all conveyor types S+S provides field-proven and economically interesting metal detectors and separators.

**S+S:  
Precision.  
Intelligence.  
Customer-orientation.**

Magnets are used especially in cases requiring a separation of ferrous metals. Exactly matched to the respective industry sectors, material types, production stages, and conveyor types (free-fall sections, pipes, belt conveyors, ...), magnets are an efficient stand-alone solution or a reasonable add-on to inductive metal detectors and separators. In many cases magnet separators are used to reduce the load on downstream detectors, separators, or sorting systems.

The S+S product range comprises separator rods, grid magnets, inline, drum, head roller and overband magnets, through to complex magnet systems with fully-automatic cleaning.

ATEX certified magnet separators are available to meet stringent explosion-protection requirements.



**Highest efficiency.  
With state-of-the-art  
technology.**

Which magnet system is suitable for which purpose? What are the possible equipment versions and performance ratings? This catalogue provides the answers to these and to many other questions. No matter what kind of magnet separator you need – S+S has the suitable solution.



# Interesting facts about magnets

## Technical terms

<b>Anisotropy:</b>	A physical quantity's property of being directionally dependent
<b>Working point:</b>	Mostly $BH_{\max}$ (in the 2nd quadrant of the hysteresis loop)
<b>B:</b>	Flux density (Tesla)
<b><math>BH_{\max}</math> (energy product):</b>	The biggest possible product of flux density B and its magnetic field strength H
<b>Curie temperature:</b>	The temperature at which a magnetic material loses its magnetic property
<b>EASY CLEAN:</b>	The magnet cores can be pulled out of the casings – for fast and efficient cleaning
<b>Max. service temperature:</b>	The highest temperature that a magnet may be exposed to without an irreversible loss of performance
<b>Demagnetisation:</b>	Reduction of the flux density to $B=0$
<b>Field:</b>	The space that bears a physical property
<b>Field line:</b>	A means of visualising fields
<b>Ferrites:</b>	Ferrimagnetic ceramic materials. Ferrites excellently conduct the magnetic flux and have a high magnetic conductivity (permeability)
<b>Ferromagnetism:</b>	Magnetic property of materials with a permeability of $\mu \gg 1$
<b>Flux, magnetic:</b>	Graphically the entirety of the field lines that penetrate a certain area
<b>Flux density B:</b>	The ratio of the magnetic flux $\Phi$ (phi) to the cross-sectional area A (density of magnetic field lines)
<b>Gauss:</b>	Outdated unit for the flux density (1 Gauss = $10^{-4}$ Tesla); 1 mT = 10 Gauss
<b>Gaussmeter:</b>	A measuring instrument for determining the flux density B
<b>H:</b>	Magnetic field strength (A/m)
<b>Hysteresis loop:</b>	A graphic representation of the flux density B depending on the magnetic field strength H
<b>Isotropy:</b>	The uniformity of physical properties in all directions
<b>J:</b>	Magnetic polarisation (Tesla)
<b>Coercive field strength:</b>	The strength of the demagnetised field
<b>Magnetisation:</b>	Extremely strong external magnetic fields result in an increase of the flux density up to saturation
<b>Magnet surface:</b>	The surface of the actual magnet core (does not have to get in direct contact with the product)
<b>Magnet pole:</b>	The position where the magnet flux exits from the magnet
<b>Neodymium (-magnet):</b>	Rare-earth material. A magnetic material with an alloy of neodymium-iron-boron (NdFeB) that has excellent magnetic properties
<b>Oerstedt:</b>	Outdated unit for the magnetic field strength (1 Oerstedt = 79.6 A/m)
<b>Paramagnetism:</b>	Magnetic property of materials with a permeability $\mu > 1$ . Above the Curie temperature all the ferromagnetic materials show paramagnetism
<b>Permanent magnet:</b>	A magnet that after successful magnetisation fully or partially keeps its magnetism
<b>Permeability <math>\mu</math>:</b>	Magnetic conductivity. Ratio of flux density B to the magnetic field H. This value states how well the magnetic flux is conducted
<b>Remanence <math>B_r</math>:</b>	The remaining flux density in a body that was exposed to a magnetising field
<b>Tesla:</b>	Unit of the magnetic flux density (1 Tesla = $10^{-4}$ Vs/cm <sup>2</sup> )
<b>Preference direction:</b>	The direction determined by the manufacturing process in which the magnet has its maximum magnetic properties
<b>Effective surface:</b>	The surface of the magnet separator that is in direct contact with the product (e.g. the outside of the stainless steel casings of separator rod systems)

# Materials

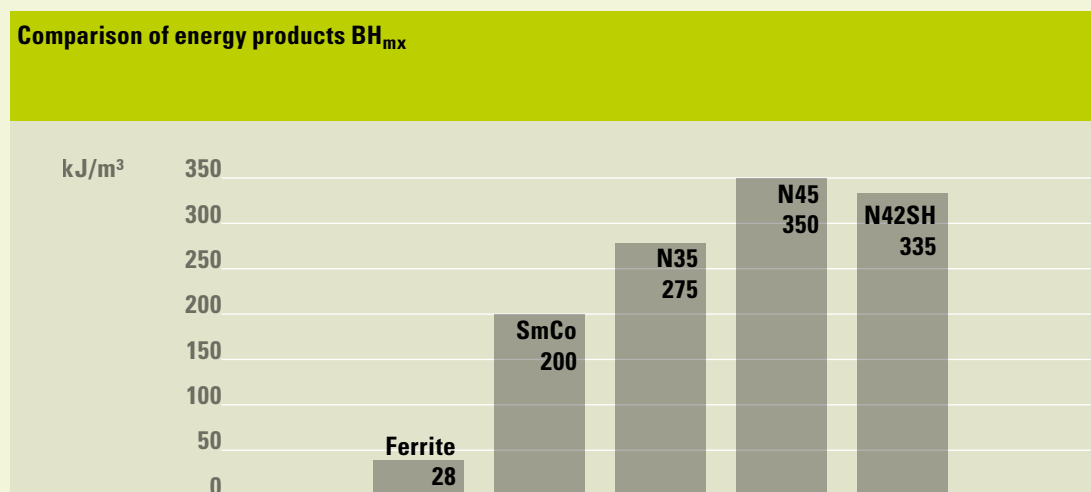
- Hard ferrites:** Are used for simple tasks.  
Curie temperature: 450 °C  
Max. service temperature: 220 °C
- SmCo:** A rare-earth compound of the metals samarium and cobalt. Also suitable for high-temperature applications. Permanently keeps its magnetic power (permanent magnets).  
Curie temperature: 750 °C  
Max. service temperature: 350 °C
- NdFeB:** Neodymium-iron-boron alloy (rare-earth material). At present these are the most powerful magnet materials that can be economically produced. Suitable for the separation of finest Fe contaminations.  
Curie temperature: 300 °C  
Max. service temperature: 100 °C (N42SH: 150 °C)

# Technical data

Magnet material	Energy product $BH_{max}$ in kJ/m <sup>3</sup>	Remanence $B_r$ in mT	Remanence $B_r$ in Gauss	Magnetic flux density at the effective surface*	Coercive force $H_cJ$ in kA/m	Max. operating temp. in °C
Ferrite Y30	28	400	4000	2500	200	220
Sm2Co17	200	1040	10400	8000/8000	≥1500	350
NdFeB (N35)	275	1200	12000	7000/7000	≥1350	100
NdFeB (N45)	350	1370	13700	11000/9000	≥955	100
NdFeB (N42SH)	335	1330	13300	9000/8000	≥1590	150

\* measured in gauss at the grid magnet system without/with EASY CLEAN

[1 Gauss = 10<sup>-4</sup> T]



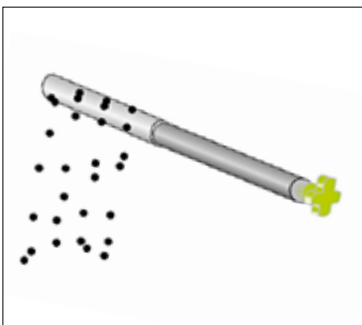


# SM

## Separator rod



EASY CLEAN version



For the separation of ferrous metals permanent-magnet separator rods can be installed at any position in the material flow of solid and liquid media.

With their extremely high magnetic power (13 700 Gauss) they even remove slightly magnetised stainless steel particles from the product flow.

**For the inspection of:** Bulk materials; dry, non-free-flowing (bridging), powdery, fine-grained (grain size < 6 mm), coarse-grained (grain size > 6 mm), flaky, fibrous, crumbly, moist, liquid/pasty (constant consistency)

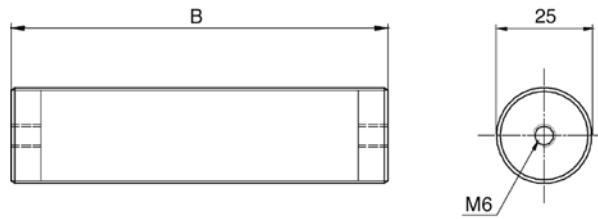
**For installation in:** Free-fall/bulk conveyors

**For application in:** Plastics industry  
Food industry  
Chemical industry  
Pharmaceutical industry  
Textile industry  
Wood industry  
Recycling industry  
Packaging industry  
Other industry sectors

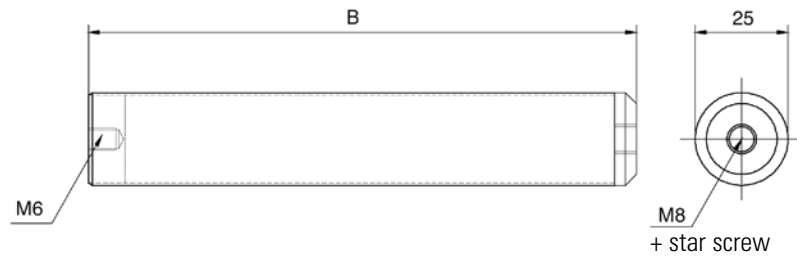


## Dimensions of the separator rod

SM



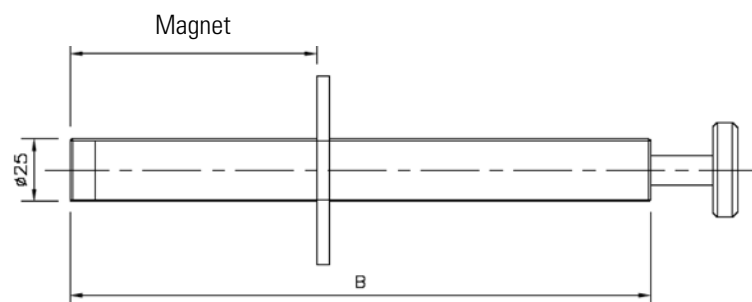
SM (Easy Clean)



## Technical data

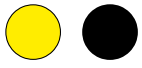
Magnet material	Gauss*	Version	Article	Rod length B										
				100	150	200	250	300	350	400	450	500		
Ferrite	2500	Standard	SMF-											
Neodymium N35	7000	Standard	SMN7-											
	7000	+ Easy Clean	SMN7-E-											
Neodymium N45	9000	Standard	SMN9-											
	9000	+ Easy Clean	SMN9-E-											
	11000	Standard	SMN11-											
Weight [kg]				0,4	0,5	0,7	0,9	1,1	1,3	1,4	1,6	1,8		

## Dimensions of the quality check rod

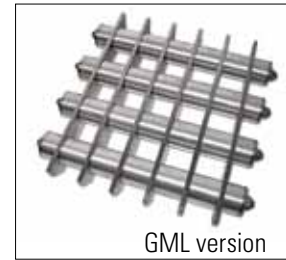


Magnet material	Gauss*	Version	Article	Magnet length		
				100	200	300
Neodymium N45	9000	+ Easy Clean	SMN9-HM-	100	200	300
Rod length B				265	365	465
Weight [kg]				1,0	1,2	1,6

\* : Measured at the effective surface of the stainless steel tube  
 Article number: Combination of "Article" and "Rod length" (e.g. SMF-100)  
 All dimensions in mm



# GMT & GML Hopper magnet



This version of the permanent-magnet grid magnet primarily is used in the plastics industry for the separation of coarse ferrous contaminations.

In the simple GML version the magnet cores are protected against damage by means of stainless steel casings. The double-layer GMT version simply is inserted in the hopper and with its slanted frames covers the complete area with magnetic field lines. The double-layer design of the magnet grid guarantees best possible contact between product and magnet.

The product to be inspected must be dry, free-flowing, and must not contain long fibres. The maximum grain size is 6 mm, the maximum height of free fall should not be more than 1000 mm.

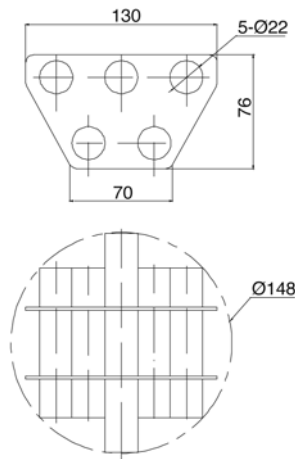
**For the inspection of:** Bulk materials; dry, free-flowing, powdery, fine-grained (grain size < 6 mm)

**For installation in:** Free-fall/bulk conveyors

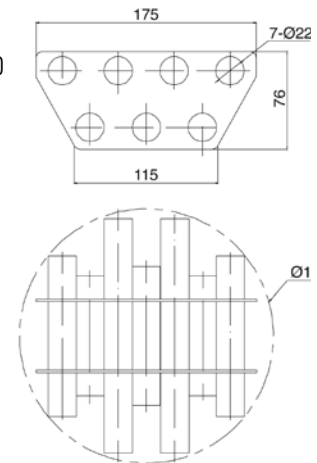
**For application in:** Plastics industry  
Recycling industry

## Dimensions

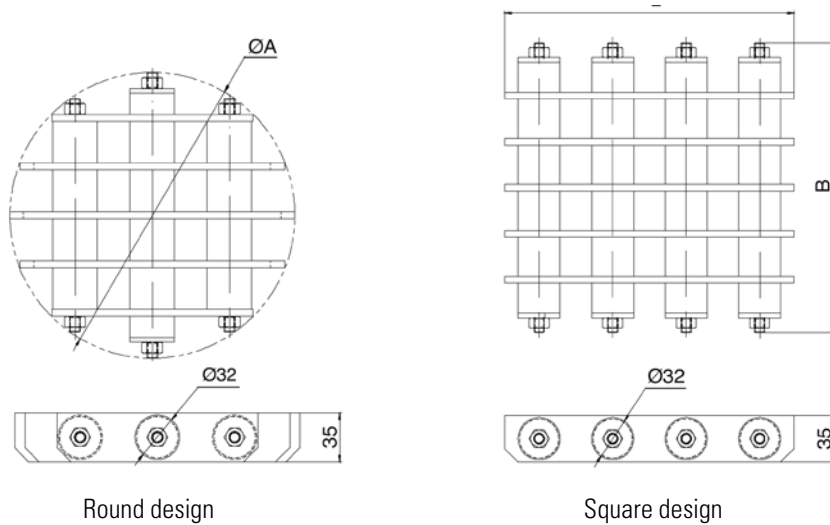
Hopper magnet GMT-0150



Hopper magnet GMT-0200



Hopper magnet GML



## Technical data

GMT	Gauss*	Article	Diameter A	
Ferrite	3000	GMT-	150	200
<b>Number of magnet rods</b>			5	7
<b>Weight [kg]</b>			1,2	1,9

GML round	Gauss*	Article	Diameter A					
Ferrite	1500	GML-	136	150	180	205	250	295
<b>Number of magnet rods</b>			2	3	3	3	4	5
<b>Weight [kg]</b>			1,7	2,1	2,7	3,8	5,8	8,6

GML square	Gauss*	Article	Length L x Width B				
Ferrite	1500	GML-R-	110x110	165x165	220x220	240x254	270x270
<b>Number of magnet rods</b>			2	3	4	4	5
<b>Weight [kg]</b>			1,3	3,1	5,8	7,2	9,1

\* : Measured at the effective surface of the tube

Article number: Combination of "Article" and "Diameter" or "Length/Width" (e.g. GMT-150)

All dimensions in mm



# GM

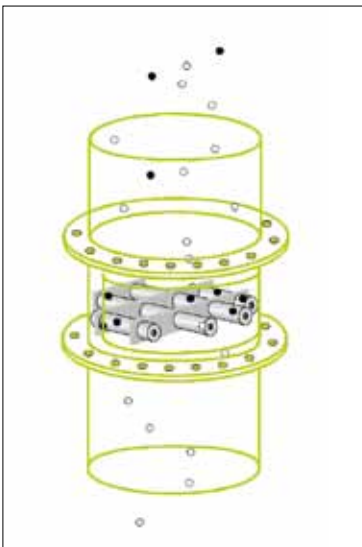
## Grid magnet



EASY CLEAN version



EASY CLEAN version



Permanent-magnet grid magnets are available in round, rectangular, or square design and can thus be universally used. Ferrous particles are reliably removed from the bulk material as it passes through the grid magnet.

With their extremely high magnetic power these magnets even remove slightly magnetised stainless steel particles from the product flow.

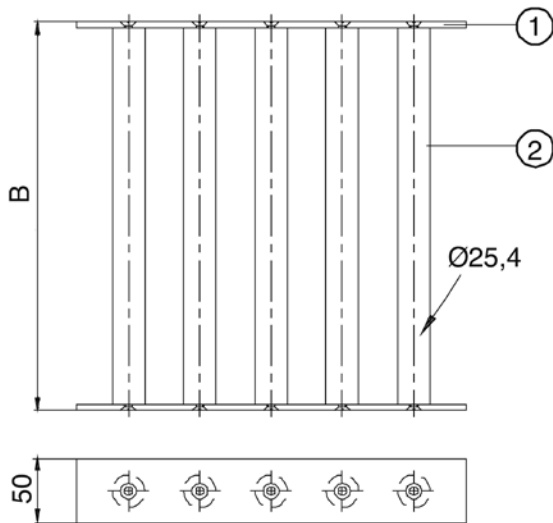
**For the inspection of:** Bulk materials; dry, free-flowing, powdery, fine-grained (grain size < 6 mm), coarse-grained (grain size > 6 mm), flaky

**For installation in:** Free-fall/bulk conveyors

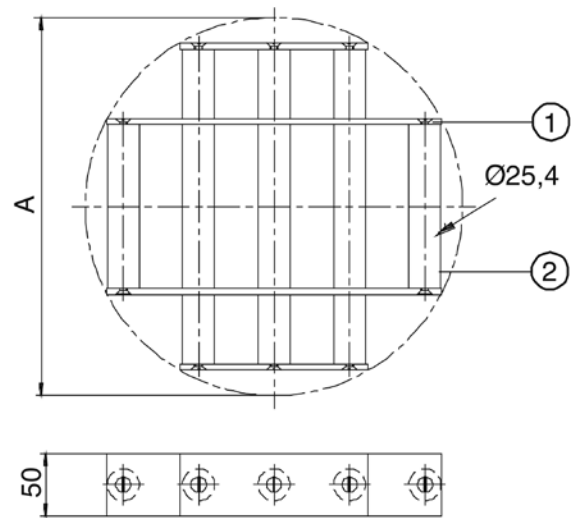
**For application in:** Plastics industry  
Food industry  
Chemical industry  
Pharmaceutical industry  
Recycling industry  
Packaging industry  
Other industry sectors

## Dimensions

Square design



Round design



① Frame    ② Magnet rod

## Technical data

Grid magnet, round	Gauss *	Version	Article	Diameter A									
				100	150	200	250	300	350	400	450	500	
Ferrite	2500	Standard	GMF-										
Neodymium N35	7000	Standard	GMN7-										
	7000	+ Easy Clean	GMN7-E-										
Neodymium N45	11000	Standard	GMN11-										
	9000	+ Easy Clean	GMN9-E-										
Number of magnet rods				2	3	3	4	5	6	7	7	8	
Weight [kg]				0,8	1,5	2,1	3,2	5,1	6,7	9,0	10,7	13,3	

Grid magnet, square	Gauss *	Version	Article	Length/Width B									
				100	150	200	250	300	350	400	450	500	
Ferrite	2500	Standard	GMF-R-										
Neodymium N35	7000	Standard	GMN7-R-										
	7000	+ Easy Clean	GMN7-ER-										
Neodymium N45	11000	Standard	GMN11-R-										
	9000	+ Easy Clean	GMN9-ER-										
Number of magnet rods				2	2	3	4	5	6	7	8	9	
Weight [kg]				1,0	1,6	2,8	4,3	6,3	8,7	11,2	14,2	17,5	

\*: Measured at the effective surface of the stainless steel tube

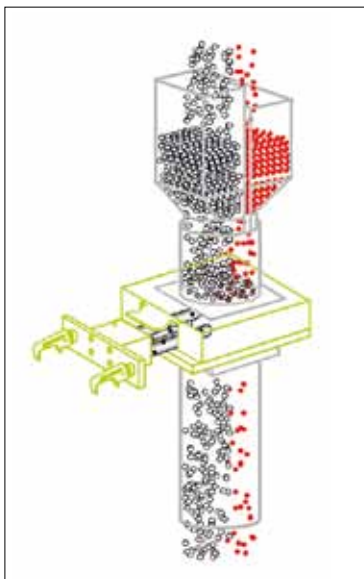
Article number: Combination of "Article" and "Diameter" or "Length/Width" (e.g. GMF-100)

All dimensions in mm



## SAFEMAG

Inline magnet for the protection of injection moulding machines, extruders, and blow moulding machines



The SAFEMAG inline magnet was specifically developed for applications that only offer a minimum available installation height (starting from 60 mm). It can be used to inspect various types of granulates up to a grain size of 6 mm and a temperature of up to 100°C in standing or slow-moving material columns.

The outstanding advantages of this magnet separator are its especially flat and sturdy design, combined with excellent magnetic performance.

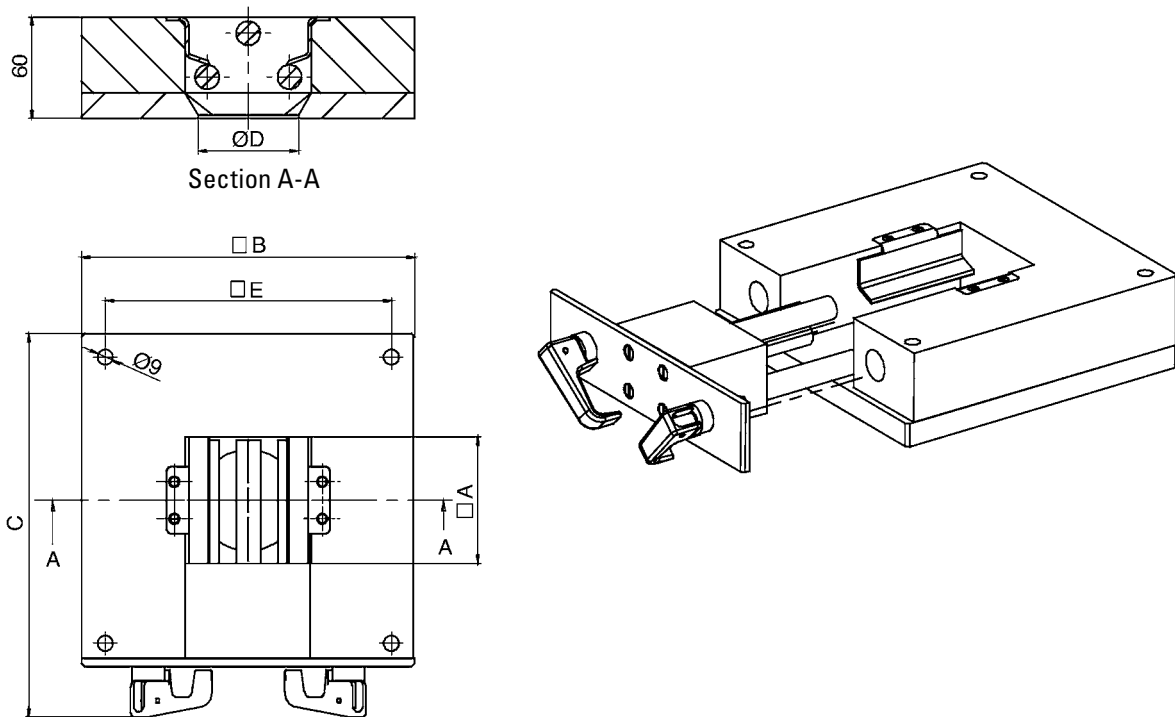
With its special design the SAFEMAG also does not allow any formation of plastic granulate deposits - which is important in case of colour or material changes.

**For the inspection of:** Bulk materials; dry, free-flowing, fine-grained (grain size < 6 mm)

**For installation in:** Bulk material columns

**For application in:** Plastics industry

## Dimensions



## Technical data

Safemag	Gauss *	Version	Article	Outlet diameter D		
				040	050	060
Neodymium N35	7000	Standard	SA-	040	050	060
Dimension of inlet A				60	75	75
Mounting width B				168	198	198
Mounting depth C				198	228	228
Drilling pattern E				140	170	170
Number of magnet rods				3	3	3
Throughput capacity [l/h]				600	1200	1900
Weight [kg]				4,35	6,0	6,0

\* : Measured at the effective surface of the stainless steel tube

Article number: Combination of "Article" and "Outlet diameter" (e.g. SA-040)

All dimensions in mm

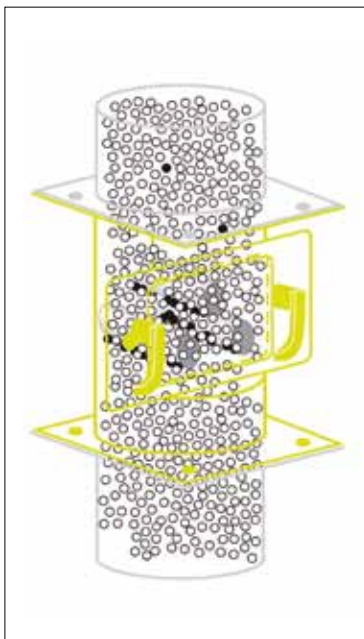
### Info:

S+S offers a large variety of adaptors for this magnet system (e.g. for Motan, Colortronic, Piovan, Koch, Engel, Arburg, Husky systems). Please request our "Adaptor plates" data sheet.



## EXTRACTOR-SE

Inline magnet for the protection of injection moulding machines, extruders, and blow moulding machines



The EXTRACTOR-SE inline magnet was specifically developed for applications in the plastics industry. It can be used to inspect various types of granulates up to a grain size of 8-10 mm and a temperature of up to 80°C in standing or slow-moving material columns. When installed directly on a machine's material inlet the magnet separator removes ferromagnetic contaminants from the granulate shortly before it is processed.

### EASY CLEAN:

Cleaning is done by removing the magnet rod unit and then pulling off the stainless steel casings. The separated contaminations fall off the rods and can be analysed.

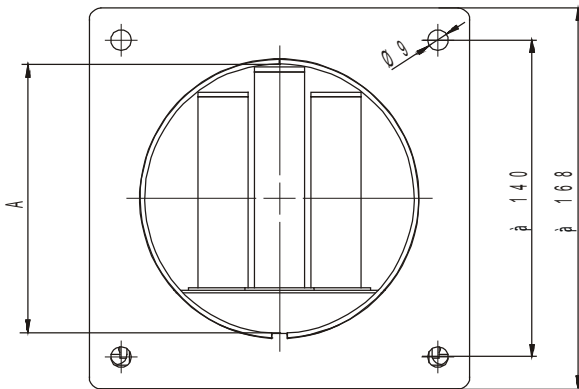
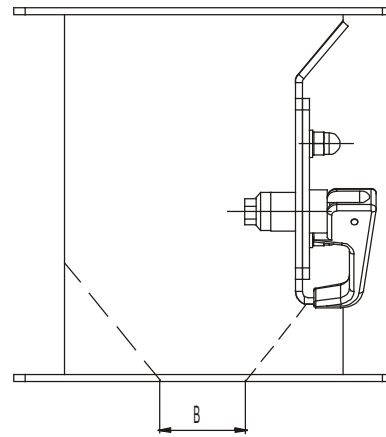
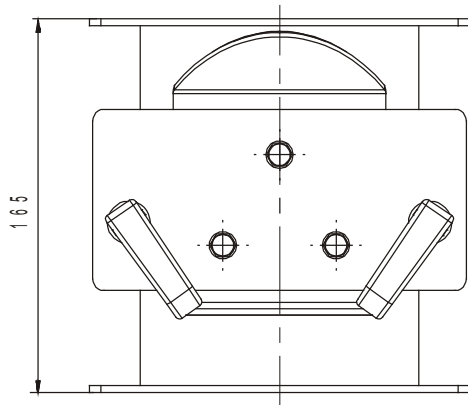
**For the inspection of:** Bulk materials; dry, free-flowing

**For installation in:** Standing or slow-moving bulk material columns

**For application in:** Plastics industry



## Dimensions



The illustration shows size 1

Flange details

Size 1: See illustration (standard)

Size 2 (option): Drilling pattern 170 mm x 170 mm

Flange size 198 mm x 198 mm

## Technical data

	Gauss *	Version	Article	Outlet diameter B						
				040	050	060	080	100	120	150
<b>Neodymium N35</b>	6000	Größe 1	ER-SE-	040	050	060	080	100	120	150
<b>Diameter of inlet A</b>				120	120	120	120	120	120	150
<b>Number of magnet rods</b>				3	3	3	3	3	3	3
<b>Throughput capacity** [l/h]</b>				1200	2600	7100	9000	9300	9300	17000
<b>Throughput capacity*** [l/h]</b>				850	1800	6000	6200	6400	6700	11500
<b>With PP centering ring</b>				✓	✓	✓	✓	✓	---	---
<b>Weight [kg]</b>				3,25	3,20	3,20	3,125	3,075	3,00	4,00

\* : Measured at the effective surface of the stainless steel tube

\*\* : Virgin material, good free flowing characteristics, material column with 500 mm free fall

\*\*\* : Regrind material, poor free flowing characteristics, material column with 500 mm free fall

Article number: Combination of "Article" and "Outlet diameter" (e.g. ER-SE-040)

All dimensions in mm

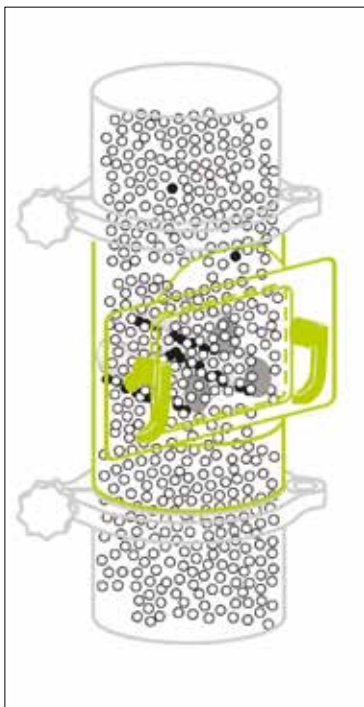
### Info:

S+S offers a large variety of adaptors for this magnet system (e.g. for Motan, Colortronic, Piovan, Koch, Engel, Arburg, Husky systems). Please request our "Adaptor plates" data sheet.



## EXTRACTOR-J

Inline magnet for installation in Jacob pipe systems and after cyclones



The EXTRACTOR-J inline magnet was specifically developed for installation in Jacob pipe systems and after cyclones in the plastics industry. It can be used to inspect various types of granulates up to a grain size of 8-10 mm and a temperature of up to 80°C in standing or slow-moving material columns. Ferromagnetic particles are reliably removed with a magnetic power of 6000 Gauss at the effective surface.

### EASY CLEAN:

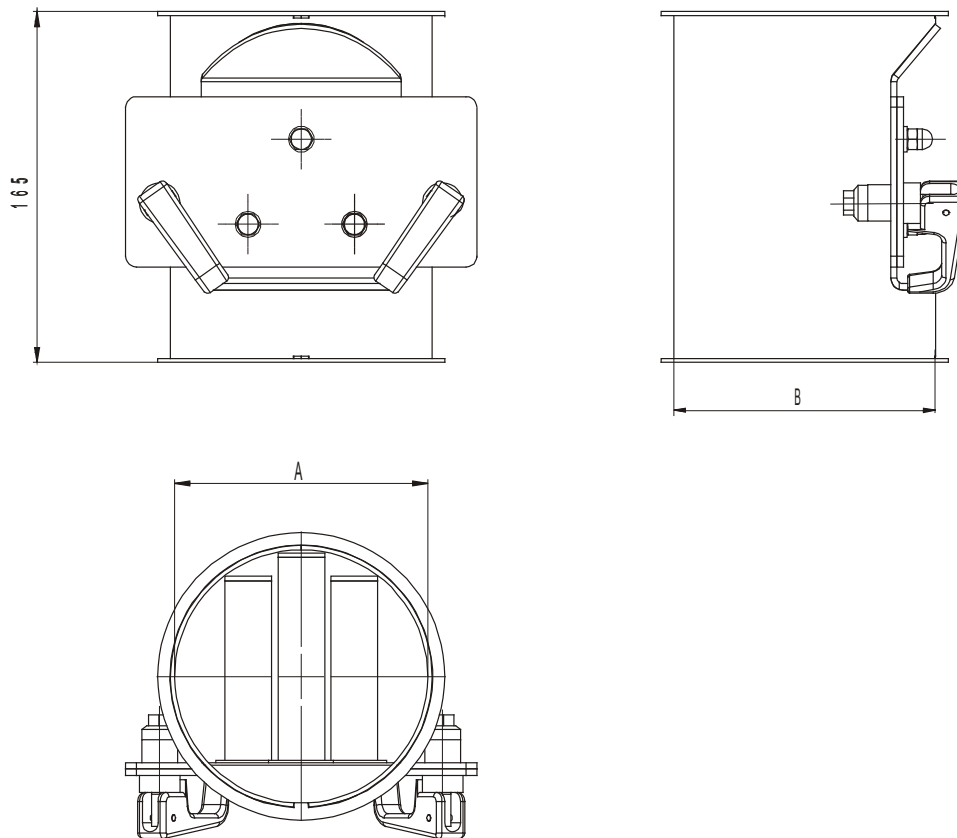
Cleaning is done by removing the magnet rod unit and then pulling off the stainless steel casings from the magnet cores. The separated contaminations fall off the rods and can be analysed.

**For the inspection of:** Bulk materials; dry, free-flowing

**For installation in:** Standing or slow-moving bulk material columns

**For application in:** Plastics industry

## Dimensions



## Technical data

	Gauss *	Article	Outlet diameter B	
<b>Neodymium N35</b>	6000	ER-J-	120	150
<b>Diameter of inlet A</b>			120	150
<b>Number of magnet rods</b>			3	3
<b>Throughput capacity** [l/h]</b>			11000	17000
<b>Weight [kg]</b>			3,00	4,00

\* : Measured at the effective surface of the stainless steel tube

\*\* : good free flowing characteristics, 500 mm free fall

Article number: Combination of "Article" and "Outlet diameter" (e.g. ER-J-120)

All dimensions in mm

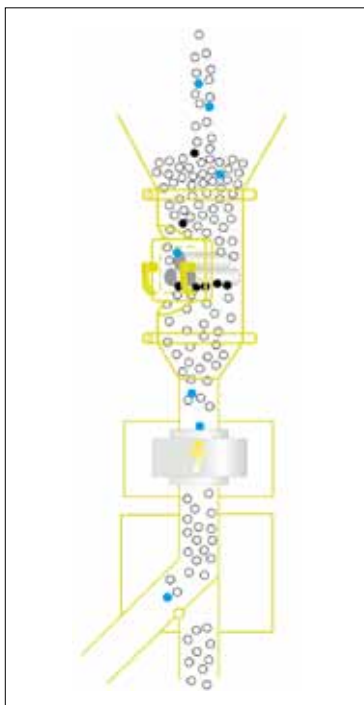
### Info:

S+S offers a large variety of adaptors and cone pieces for this magnet system. For detailed information please consult your experienced S+S sales consultant – by telephone or at your location.



## EXTRACTOR-K

Inline magnet for installation in Jacob pipe systems and after cyclones



The EXTRACTOR-K inline magnet was specifically developed for installation in combination with a metal separator. The inline magnet removes all the magnetic metal contaminants, and the metal separator then reliably detects and separates all the remaining non-magnetic metals. It can be used to inspect various types of granulates up to a grain size of 8-10 mm and a temperature of up to 80°C.

### EASY CLEAN:

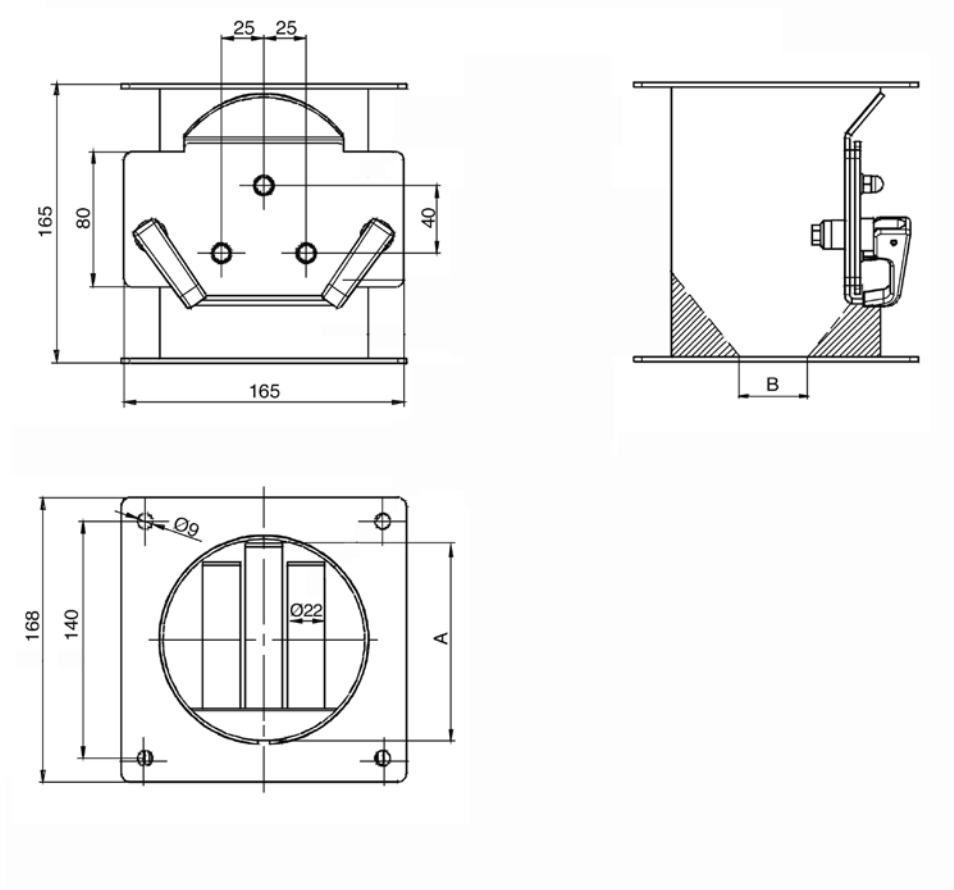
Cleaning is done by removing the magnet rod unit and then pulling off the stainless steel casings from the magnet cores. The separated contaminations fall off the rods and can be analysed.

**For the inspection of:** Bulk materials; dry, free-flowing

**For installation in:** Standing or slow-moving bulk material columns

**For application in:** Plastics industry

## Dimensions



## Technical data

	Gauss *	Version	Article	Outlet diameter B						
				040	050	070	080	100	120	150
<b>Neodymium N35</b>	6000	Größe 1	ER-K-	040	050	070	080	100	120	150
<b>Diameter of inlet A</b>				120	120	120	120	120	120	150
<b>Number of magnet rods</b>				3	3	3	3	3	3	3
<b>Throughput capacity** [l/h]</b>				1200	2600	7100	9000	9300	9300	17000
<b>Throughput capacity*** [l/h]</b>				850	1800	6000	6200	6400	6700	11500
<b>With PP centering ring</b>				✓	✓	✓	✓	✓	---	---
<b>Weight [kg]</b>				3,15	3,10	3,10	3,00	2,90	2,90	3,80

\* : Measured at the effective surface of the stainless steel tube

\*\* : Virgin material, good free flowing characteristics, material column with 500 mm free fall

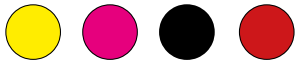
\*\*\* : Regrind material, poor free flowing characteristics, material column with 500 mm free fall

Article number: Combination of "Article" and "Outlet diameter" (e.g. ER-K-120)

All dimensions in mm

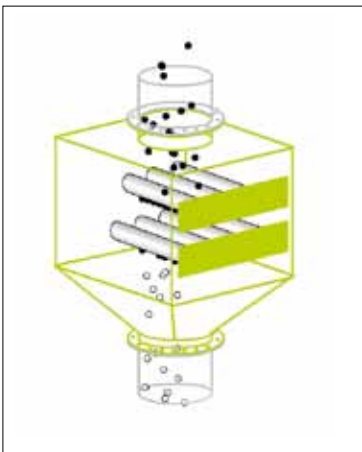
### Info:

S+S offers a large variety of adaptors and cone pieces for this magnet system. For detailed information please consult your experienced S+S sales consultant – by telephone or at your location.



## MAGBOX MXS

Inline magnet for free-fall applications  
(round connections)



MAGBOX inline magnets primarily are installed in (existing) pipes for the thorough separation of fine and very fine ferrous metal contaminations from bulk materials.

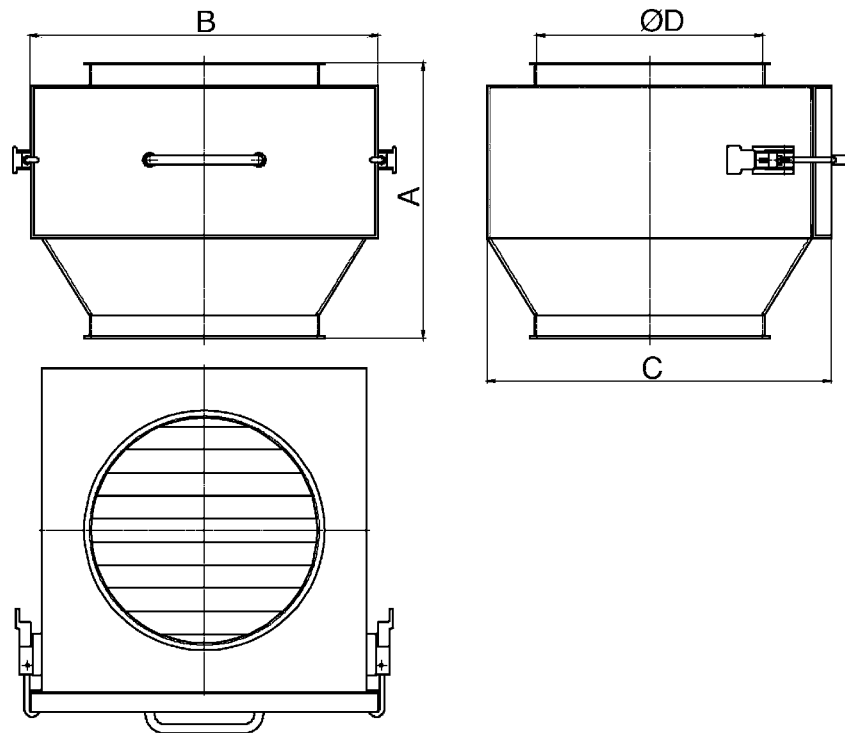
With their extremely high magnetic power (13 700 Gauss) they even remove slightly magnetised stainless steel particles from the product flow. The optional EASY CLEAN feature allows efficient and fast cleaning of the separator.

**For the inspection of:** Bulk materials; dry, free-flowing, powdery, fine-grained (grain size < 6 mm), coarse-grained (grain size > 6 mm), flaky

**For installation in:** Free-fall/bulk conveyors

**For application in:** Plastics industry  
Chemical industry  
Recycling industry  
Packaging industry

## Dimensions



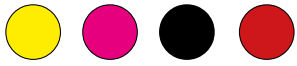
## Technical data

Round	Gauss *	Version	Article	Connection diameter D						
				0100	0150	0200	0250	0300	0350	0400
<b>Neodymium N35</b>	7000	1-layer	MXS17-							
	7000	+ Easy Clean	MXS17-E-							
	7000	2-layer	MXS27-							
	7000	+ Easy Clean	MXS27-E-							
<b>Neodymium N45</b>	9000	1-layer	MXS19-							
	9000	+ Easy Clean	MXS19-E-							
	9000	2-layer	MXS29-							
	9000	+ Easy Clean	MXS29-E-							
<b>Neodymium N45</b>	11000	1-layer	MXS111-							
	11000	2-layer	MXS211-							
<b>Installation height A</b>				274	284	294	304	314	324	334
<b>Installation width B</b>				208	258	308	358	408	458	508
<b>Installation depth C</b>				229	279	329	379	429	479	529
<b>Number of magnet rods</b>		1-layer		3	4	5	6	7	8	9
		2-layer		3+2	4+3	5+4	6+5	7+6	8+7	9+8
<b>Throughput capacity [m³/h]</b>		1-layer		17	30	48	68	78	90	105
		2-layer		15	27	43	61	71	83	98
<b>Weight [kg]</b>		1-layer		8	11	14,5	22,5	27,5	31,5	37
		2-layer		10,5	14,5	19,5	30	37	44	53

\* : Measured at the effective surface of the stainless steel tube

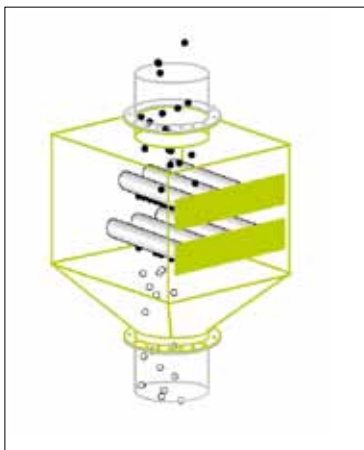
Article number: Combination of "Article" and "Connection diameter" (e.g. MXS17-0100)

All dimensions in mm



## MAGBOX MXS

Inline magnet for free-fall applications  
(square connections)



MAGBOX inline magnets primarily are installed in (existing) pipes for the thorough separation of fine and very fine ferrous metal contaminations from bulk materials.

With their extremely high magnetic power (13 700 Gauss) they even remove slightly magnetised stainless steel particles from the product flow. The optional EASY CLEAN feature allows efficient and fast cleaning of the separator.

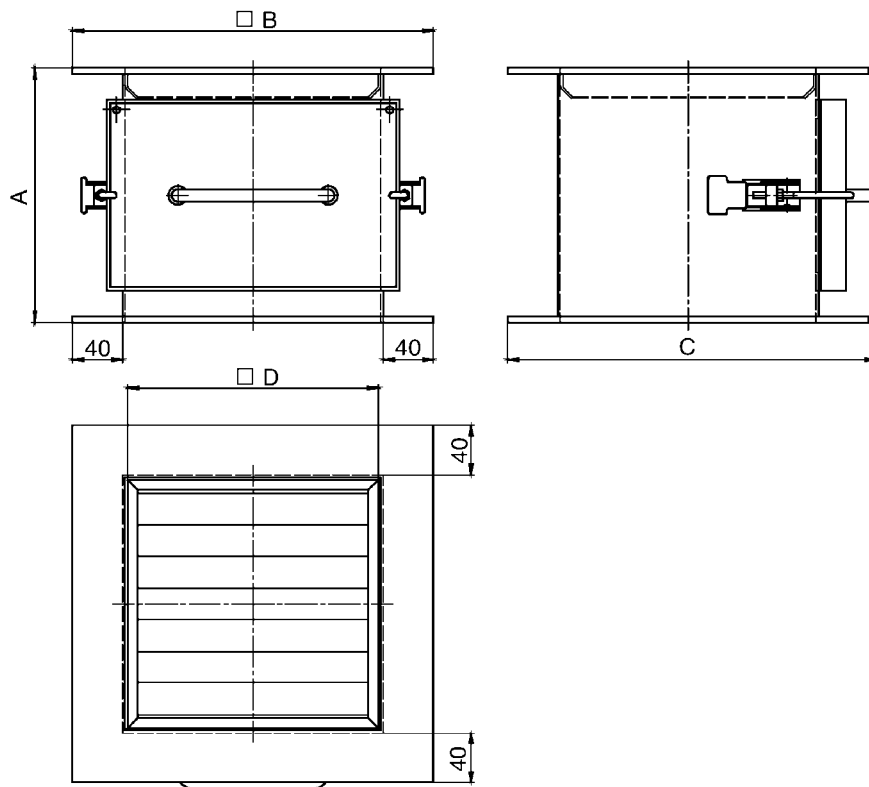
**For the inspection of:** Bulk materials; dry, free-flowing, powdery, fine-grained (grain size < 6 mm), coarse-grained (grain size > 6 mm), flaky

**For installation in:** Free-fall/bulk conveyors

**For application in:** Plastics industry  
Chemical industry  
Recycling industry  
Packaging industry



## Dimensions



## Technical data

Square	Gauss *	Version	Article	Connection dimension, square D											
				0150	0200	0250	0300	0350	0400						
<b>Neodymium N35</b>	7000	1-layer	MXS17-R-												
	7000	+ Easy Clean	MXS17-ER-												
	7000	2-layer	MXS27-R-												
	7000	+ Easy Clean	MXS27-ER-												
<b>Neodymium N45</b>	9000	1-layer	MXS19-R-												
	9000	+ Easy Clean	MXS19-ER-												
	9000	2-layer	MXS29-R-												
	9000	+ Easy Clean	MXS29-ER-												
<b>Neodymium N45</b>	11000	1-layer	MXS111-R-												
	11000	2-layer	MXS211-R-												
<b>Installation height A</b>										205	205	220	220	220	220
<b>Installation width B</b>										238	288	338	388	438	488
<b>Installation depth C</b>				244	294	344	394	444	494						
<b>Number of magnet rods</b>		1-layer		2	3	4	5	6	7						
		2-layer		2+1	3+2	4+3	5+4	6+5	7+6						
<b>Throughput capacity [m³/h]</b>		1-layer		14	24	38	55	74	97						
		2-layer		12	21	34	49	67	87						
<b>Weight [kg]</b>		1-layer		8	11	16,5	20,5	25	29,5						
		2-layer		9,5	13	19,5	25,5	32,5	39						

\* : Measured at the effective surface of the stainless steel tube

Article number: Combination of "Article" and "Connection dimension" (e.g. MXS17-R-0150)

All dimensions in mm



## MAGBOX MXF FOOD/PHARMA

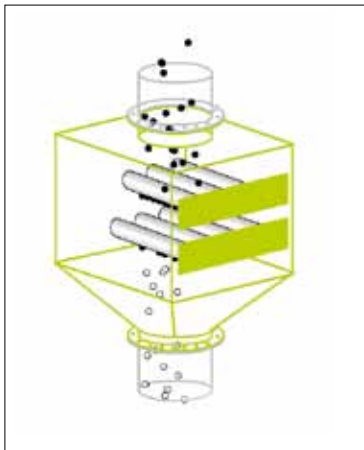
Inline magnet for free-fall applications  
(round connections)



2-layer FOOD version with EASY CLEAN



2-layer PHARMA version with EASY CLEAN



MAGBOX FOOD/PHARMA inline magnets primarily are used in the food industry, in the pharmaceutical industry, and in similar sensitive applications. The sturdy and wear-resistant housing is made of rust-proof stainless steel (1.4404), all the surfaces and welding joints are seamless and highly polished.

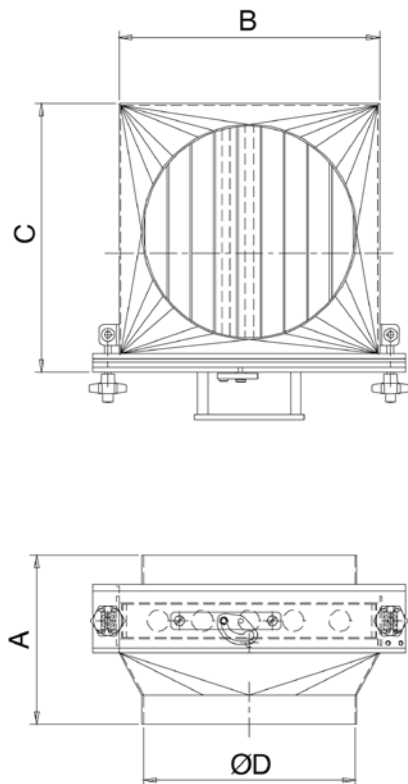
With their extremely high magnetic power they even remove slightly magnetised stainless steel particles from the product flow.

**For the inspection of:** Bulk materials; dry, free-flowing, powdery, fine-grained (grain size < 6 mm), coarse-grained (grain size > 6 mm), flaky

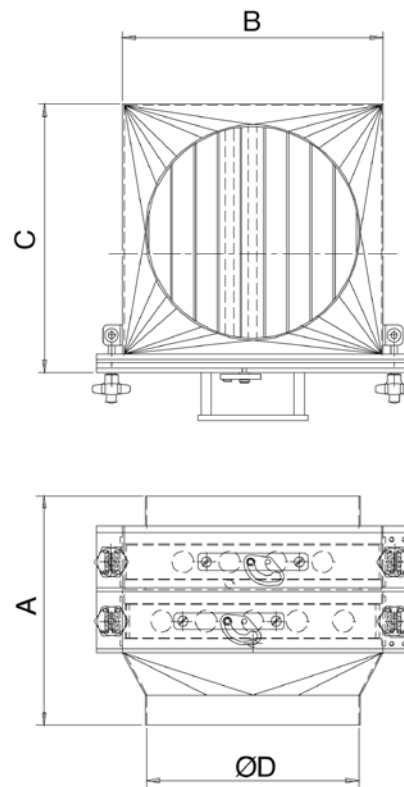
**For installation in:** Free-fall/bulk conveyors

**For application in:** Food industry  
Chemical industry  
Pharmaceutical industry

## Dimensions



1-layer



2-layer

## Technical data

Magbox, round	Gauss*	Version	Article	Connection diameter D						
				0100	0150	0200	0250	0300	0350	0400
<b>Neodymium N35</b>	7000	1-layer	MXF17-							
	7000	+ Easy Clean	MXF17-E-							
	7000	2-layer	MXF27-							
	7000	+ Easy Clean	MXF27-E-							
<b>Neodymium N45</b>	9000	1-layer	MXF19-							
	9000	+ Easy Clean	MXF19-E-							
	9000	2-layer	MXF29-							
	9000	+ Easy Clean	MXF29-E-							
<b>Neodymium N45</b>	11000	1-layer	MXF111-							
	11000	2-layer	MXF211-							
<b>Installation height A</b>		1-layer		200	200	200	200	200	200	200
		2-layer		270	270	270	270	270	270	270
<b>Installation width B</b>				158	208	258	308	358	408	458
<b>Installation depth C</b>				164	214	264	314	364	414	464
<b>Number of magnet rods</b>		1-layer		2	3	4	5	6	7	8
		2-layer		2+1	3+2	4+3	5+4	6+5	7+6	8+7
<b>Throughput capacity [m³/h]</b>		1-layer		9	17	30	48	68	78	90
		2-layer		8	15	27	43	61	71	83
<b>Weight [kg]</b>		1-layer		7	8	11	18	23	26	31
		2-layer		11	14	18	25	31	39	50

\* : Measured at the effective surface of the stainless steel tube

Article number: Combination of "Article" and "Connection diameter" (e.g. MXF17-0100)

All dimensions in mm

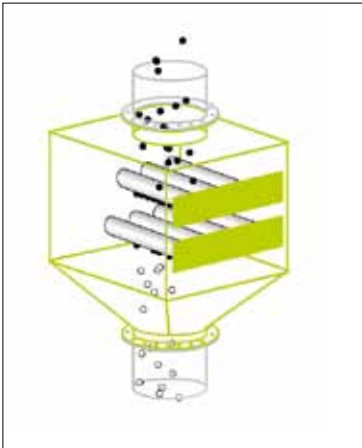


## MAGBOX MXF FOOD/PHARMA

Inline magnet for free-fall applications  
(square connections)



1-layer FOOD version with EASY CLEAN



MAGBOX FOOD/PHARMA inline magnets primarily are used in the food industry, in the pharmaceutical industry, and in similar sensitive applications. The sturdy and wear-resistant housing is made of rust-proof stainless steel (1.4404), all the surfaces and welding joints are seamless and highly polished.

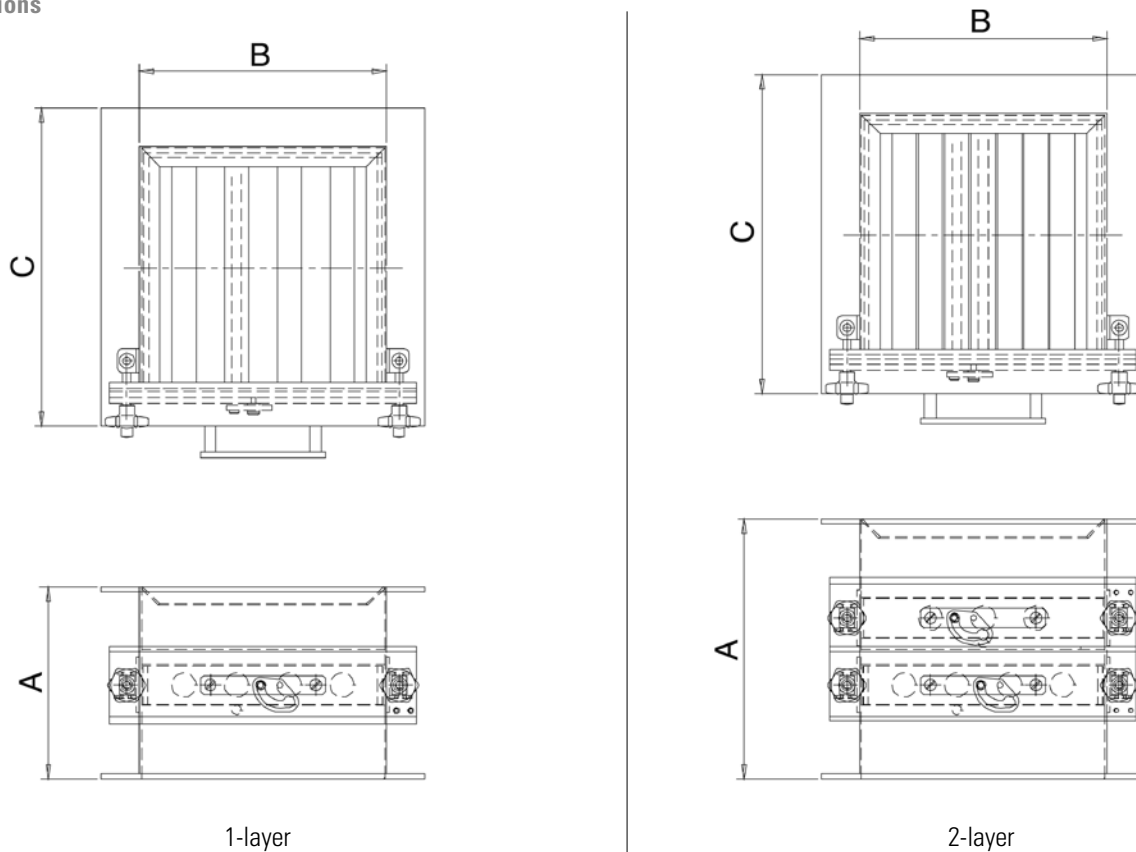
With their extremely high magnetic power they even remove slightly magnetised stainless steel particles from the product flow.

**For the inspection of:** Bulk materials; dry, free-flowing, powdery, fine-grained (grain size < 6 mm), coarse-grained (grain size > 6 mm), flaky

**For installation in:** Free-fall/bulk conveyors

**For application in:** Food industry  
Chemical industry  
Pharmaceutical industry

## Dimensions



## Technical data

Magbox, square	Gauss *	Version	Article	Connection dimension, square D					
				0150	0200	0250	0300	0350	0400
<b>Neodymium N35</b>	7000	1-layer	MXF17-R-						
	7000	+ Easy Clean	MXF17-ER-						
	7000	2-layer	MXF27-R-						
	7000	+ Easy Clean	MXF27-ER-						
<b>Neodymium N45</b>	9000	1-layer	MXF19-R-						
	9000	+ Easy Clean	MXF19-ER-						
	9000	2-layer	MXF29-R-						
	9000	+ Easy Clean	MXF29-ER-						
<b>Neodymium N45</b>	11000	1-layer	MXF111-R-						
	11000	2-layer	MXF211-R-						
<b>Installation height A</b>		1-layer		200	200	200	200	200	200
		2-layer		270	270	270	270	270	270
<b>Installation width B</b>				150	200	250	300	350	400
<b>Installation depth C</b>				156	206	256	306	356	406
<b>Number of magnet rods</b>		1-layer		2	3	4	5	6	7
		2-layer		2+1	3+2	4+3	5+4	6+5	7+6
<b>Throughput capacity [m³/h]</b>		1-layer		14	24	38	55	74	97
		2-layer		12	21	34	49	67	87
<b>Weight [kg]</b>		1-layer		8	13	16	20	24	28
		2-layer		12	17	21	28	35	43

\* : Measured at the effective surface of the stainless steel tube

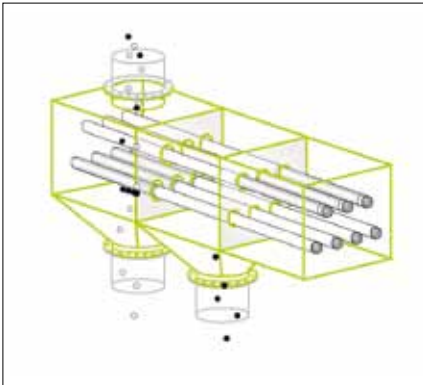
Article number: Combination of "Article" and "Connection dimension" (e.g. MXF17-R-0150)

All dimensions in mm



## MAGBOX AUTO CLEAN

Inline magnet system with automatic cleaning  
(round connections)



MAGBOX AUTO CLEAN magnet systems are installed in continuous conveying production lines for the automated separation of fine and very fine ferrous metal contaminations from various types of bulk materials. With a PLC controller the cleaning intervals can be set according to the respective level of contamination. The new "shuttle core" design ensures a compact system design without any directly moved system components.

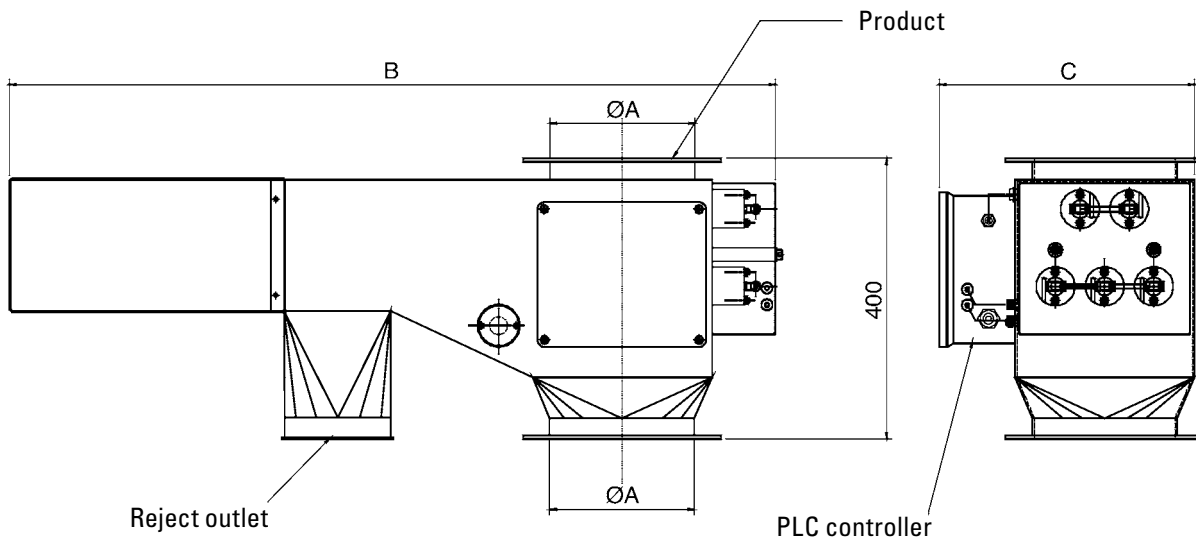
With their extremely high magnetic power (13700 Gauss) they even remove slightly magnetised stainless steel particles from the product flow.

**For the inspection of:** Bulk materials; dry, free-flowing, powdery, fine-grained (grain size < 6 mm), coarse-grained (grain size > 6 mm), flaky

**For installation in:** Free-fall/bulk conveyors

**For application in:** Plastics industry  
Food industry  
Chemical industry  
Pharmaceutical industry  
Recycling industry  
Packaging industry  
Other industry sectors

## Dimensions



## Technical data

MXA, round	Gauss *	Version	Article	Connection diameter A					
				0150	0200	0250	0300	0350	0400
Neodymium N45	9000	1-layer	MXA19-						
	9000	2-layer	MXA29-						
Installation height		1-layer		300	300	300	300	300	300
		2-layer		400	400	400	400	400	400
Installation length B				980	1080	1180	1280	1380	1480
Installation width C				310	360	410	460	510	560
Number of magnet rods		1-layer		3	3	4	5	6	7
		2-layer		3+2	3+2	4+3	5+4	6+5	7+6
Throughput capacity [m³/h]		1-layer		17	30	48	68	78	90
		2-layer		15	27	43	61	71	83
Weight [kg]		1-layer		26	33	40	50	55	64
		2-layer		31	38	47	58	69	81

\* : Measured at the effective surface of the stainless steel tube

Article number: Combination of "Article" and "Connection diameter" (e.g. MXA19-0150)

All dimensions in mm

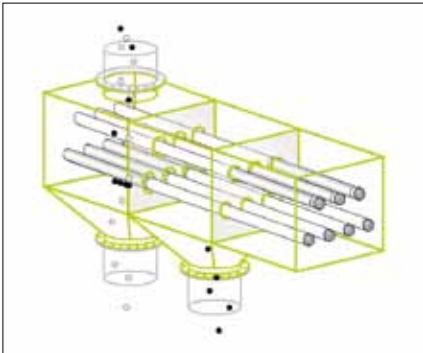


# MAGBOX AUTO CLEAN

Inline magnet system with automatic cleaning  
(square connections)



4-layer version with deflectors (ATEX)



MAGBOX AUTO CLEAN magnet systems are installed in continuous conveying production lines for the automated separation of fine and very fine ferrous metal contaminations from various types of bulk materials. With a PLC controller the cleaning intervals can be set according to the respective level of contamination. The new "shuttle core" design ensures a compact system design without any directly moved system components.

With their extremely high magnetic power (13700 Gauss) they even remove slightly magnetised stainless steel particles from the product flow.

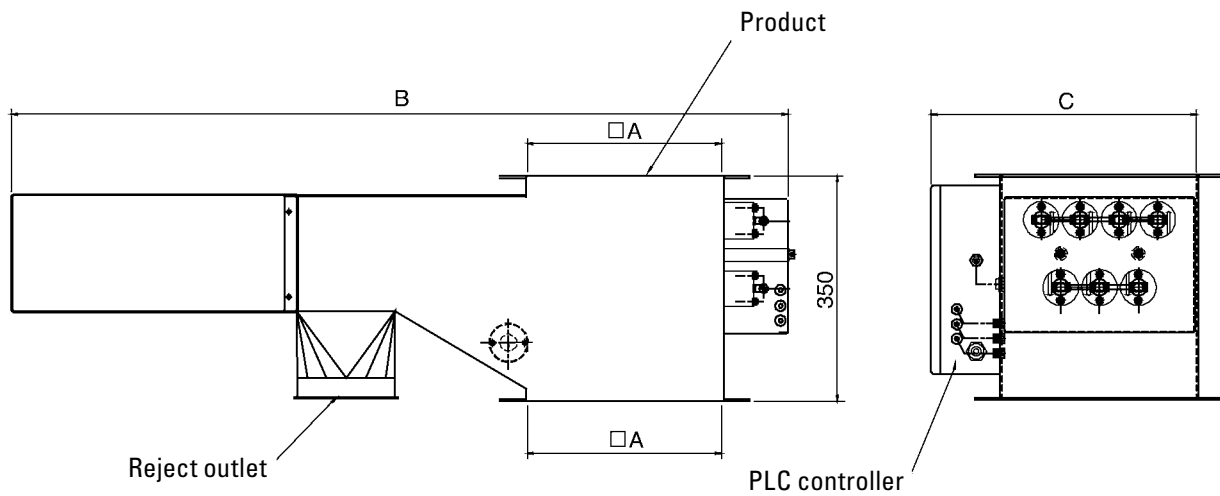
**For the inspection of:** Bulk materials; dry, free-flowing, powdery, fine-grained (grain size < 6 mm), coarse-grained (grain size > 6 mm), flaky

**For installation in:** Free-fall/bulk conveyors

**For application in:** Plastics industry  
Food industry  
Chemical industry  
Pharmaceutical industry  
Recycling industry  
Packaging industry  
Other industry sectors



## Dimensions



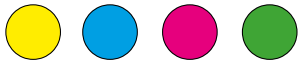
## Technical data

MXA, square	Gauss*	Version	Article	Connection dimension, square A					
				0150	0200	0250	0300	0350	0400
Neodymium N45	9000	1-layer	MXA19-R-						
	9000	2-layer	MXA29-R-						
<b>Installation height</b>		1-layer		250	250	250	250	250	250
		2-layer		350	350	350	350	350	350
<b>Installation length B</b>				880	980	1080	1180	1280	1380
<b>Installation width C</b>				260	310	360	410	460	510
<b>Number of magnet rods</b>		1-layer		2	3	3	4	5	6
		2-layer		2+2	3+2	3+2	4+3	5+4	6+5
<b>Throughput capacity [m³/h]</b>		1-layer		14	24	38	55	74	97
		2-layer		12	21	34	49	67	87
<b>Weight [kg]</b>		1-layer		19	23	28	34	40	45
		2-layer		24	28	35	43	52	61

\*: Measured at the effective surface of the stainless steel tube

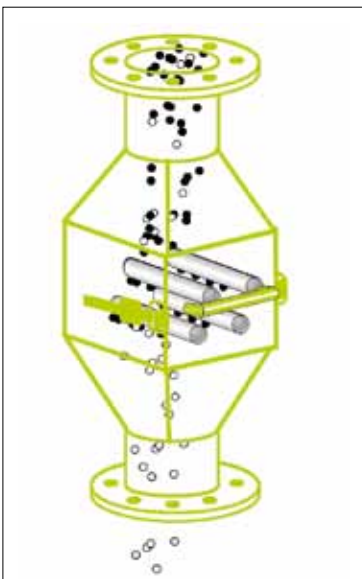
Article number: Combination of "Article" and "Connection dimension" (e.g. MXA19-R-0150)

All dimensions in mm



# PNEUMAG

## Inline magnet for vacuum/pressure conveyor pipes



This special inline magnet was designed for applications in vacuum and pressure conveyor pipes with high flow velocities (up to 25 m/s). The special design allows a product flow through the system in both directions.

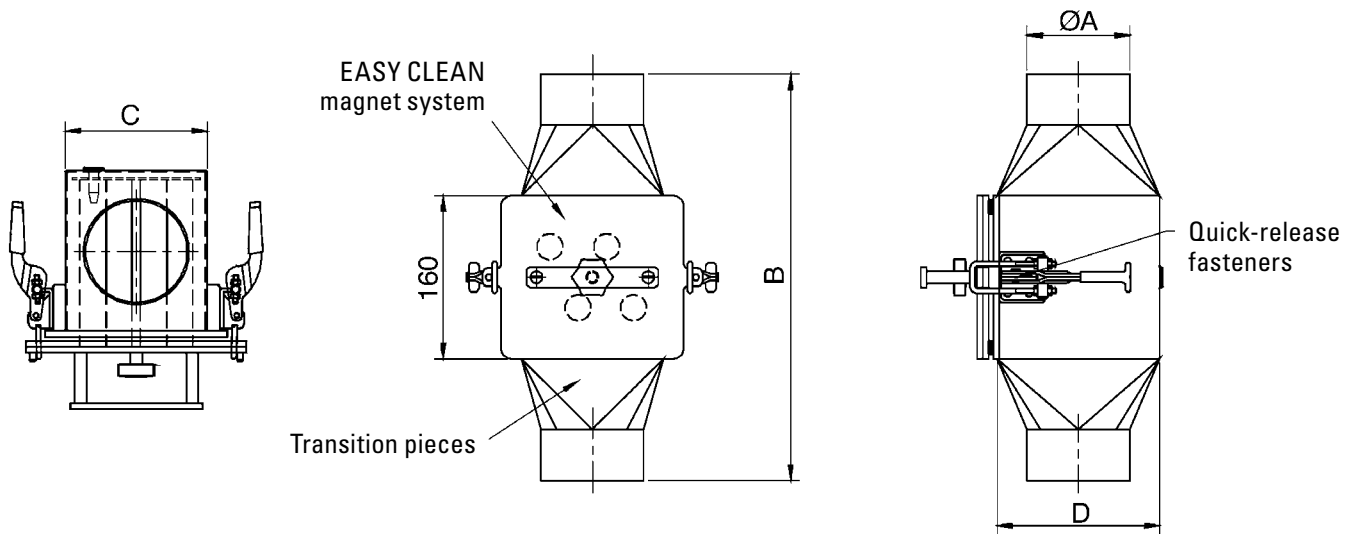
With its extremely high magnetic power this magnet system even removes slightly magnetised stainless steel particles from the product flow.

**For the inspection of:** Bulk materials; dry, free-flowing, powdery, fine-grained (grain size < 6 mm), coarse-grained (grain size > 6 mm), flaky

**For installation in:** Pressure conveyor pipes/vacuum conveyor pipes

**For application in:** Plastics industry  
Food industry  
Chemical industry  
Pharmaceutical industry

## Dimensions



## Technical data

	Gauss *	Version	Article	Connection diameter A						
				050	075	0100	0125	0150	0175	0200
<b>Neodymium N45</b>	9000	Easy Clean	PG9-E-	050	075	0100	0125	0150	0175	0200
<b>Installation height B</b>				460	460	460	500	500	500	500
<b>Installation width C</b>				110	140	140	200	200	250	250
<b>Installation depth D</b>				110	160	160	200	200	250	250
<b>Number of magnet rods</b>				3	4	4	6	6	8	8
<b>Throughput capacity [m³/h]</b>				12	26	47	77	108	148	192
<b>Weight [kg]</b>				8	14	14	16	16	24	24

\*: Measured at the effective surface of the stainless steel tube

Article number: Combination of "Article" and "Connection diameter" (e.g. PG9-E-050)

All dimensions in mm

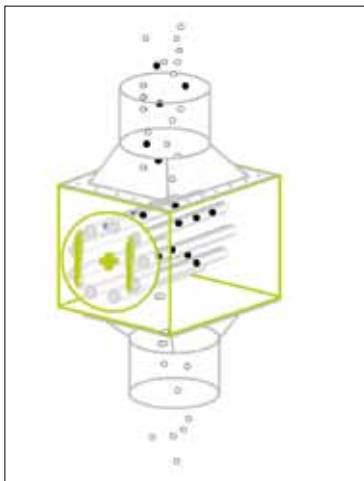


# ROTOBOX

Inline magnet for free-fall applications  
(poor free-flowing products)



PHARMA, EASY CLEAN (ATEX) version



The ROTOBOX magnet separator with rotating magnet rods primarily is used to remove fine and very fine ferrous contaminations from bulk materials that tend to bridging and/or caking. The rotating action of the magnet rod matrix that is powered by an electric motor prevents increasing clogging of the magnet separator and always ensures optimal contact of the product with the magnet.

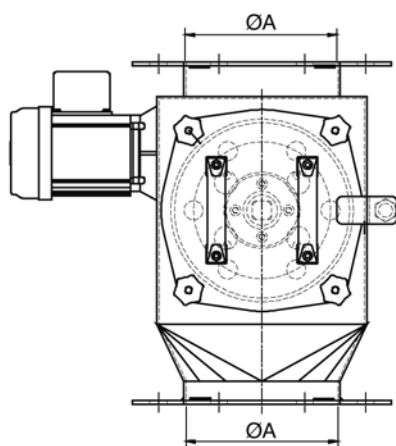
With its extremely high magnetic power (13700 Gauss) this magnet system even removes slightly magnetised stainless steel particles from the product flow.

**For the inspection of:** Bulk materials; dry, non-free-flowing (bridging), powdery, fine-grained (grain size < 6 mm), coarse-grained (grain size > 6 mm), flaky, fibrous, crumbly

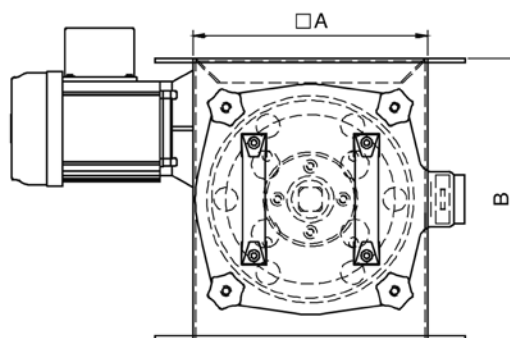
**For installation in:** Free-fall/bulk conveyors

**For application in:** Plastics industry  
Food industry  
Chemical industry  
Pharmaceutical industry  
Wood industry  
Recycling industry  
Other industry sectors

## Dimensions



Round connection



Square connection

## Technical data

Rotobox, round	Gauss *	Version	Article	Connection diameter A				
Neodymium N45	11000	Standard	RX11-	0200	0250	0300	0350	0400
	9000	+Easy Clean	RX9-E-					
Installation height B				450	500	550	600	650
Number of magnet rods				6	7	9	10	13
Motor power [kW]				0,25	0,25	0,25	0,25	0,25
Rotor speed [U/min]				28	28	28	28	28
Throughput capacity [m³/h]				19	30	39	48	60
Weight [kg]				35	44	55	68	82

Rotobox, square	Gauss *	Version	Article	Connection dimension, square A				
Neodymium N45	11000	Standard	RX11-R-	0200	0250	0300	0350	0400
	9000	+Easy Clean	RX9-ER-					
Installation height B				250	300	350	400	450
Number of magnet rods				5	6	7	9	10
Motor power [kW]				0,18	0,25	0,25	0,25	0,25
Rotor speed [U/min]				24	28	28	28	28
Throughput capacity [m³/h]				24	38	49	60	75
Weight [kg]				26	33	43	54	67

\* : Measured at the effective surface of the stainless steel tube

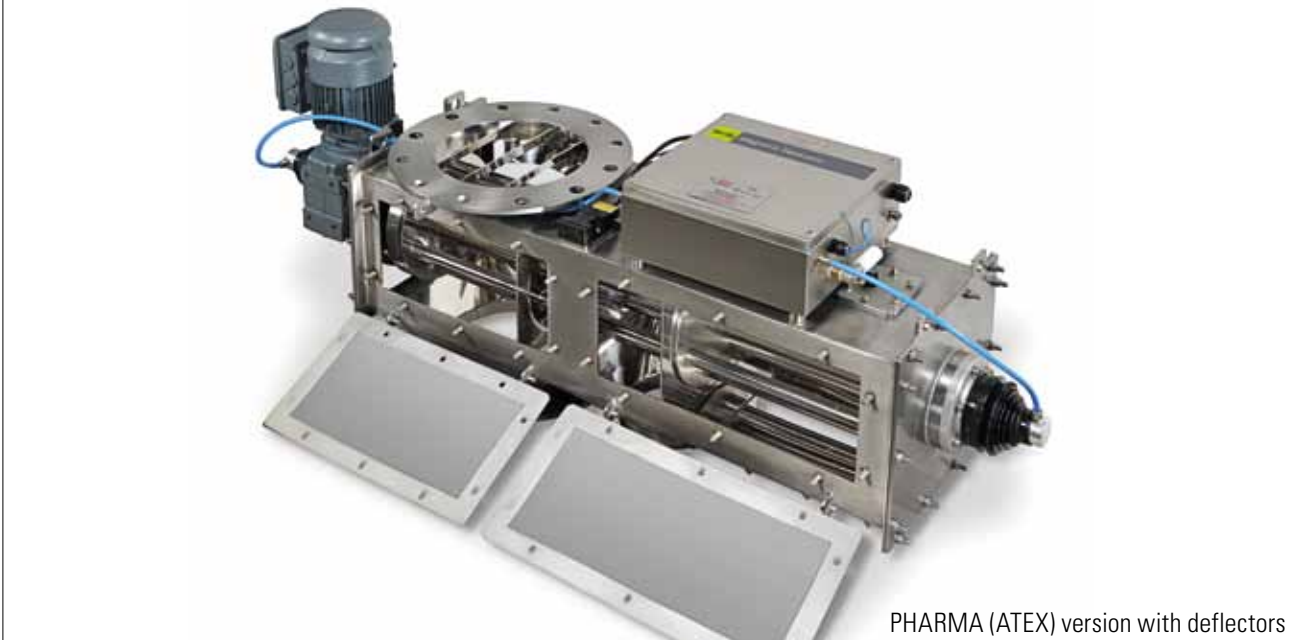
Article number: Combination of "Article" and "Dimension A" (e.g. RX9-0200)

All dimensions in mm

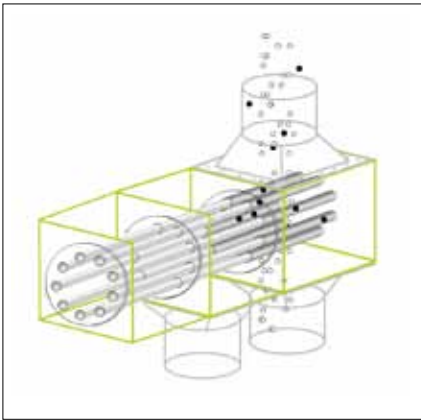


## ROTOBOX AUTO CLEAN

Inline magnet for free-fall applications  
(poor free-flowing products)



PHARMA (ATEX) version with deflectors



The ROTOBOX magnet separator with rotating magnet rods primarily is used to remove fine and very fine ferrous contaminations from bulk materials that tend to bridging and/or caking. The rotating action of the magnet rod matrix that is powered by an electric motor prevents increasing clogging of the magnet separator and always ensures optimal contact of the product with the magnet.

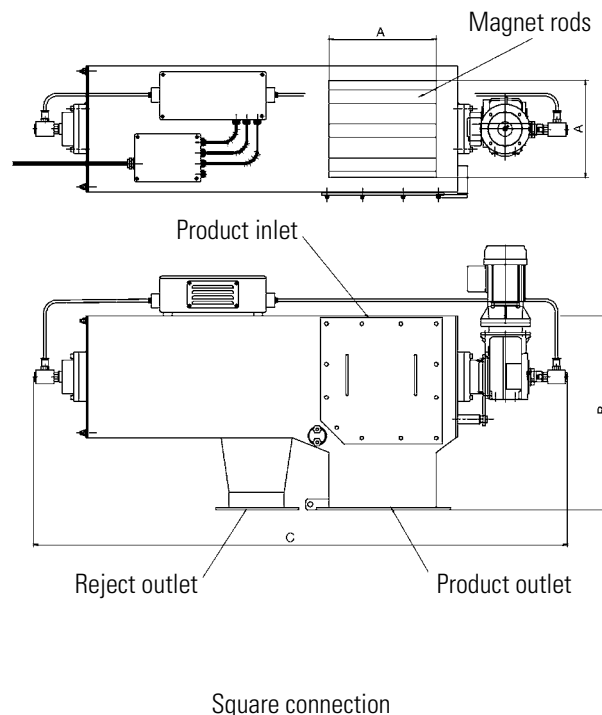
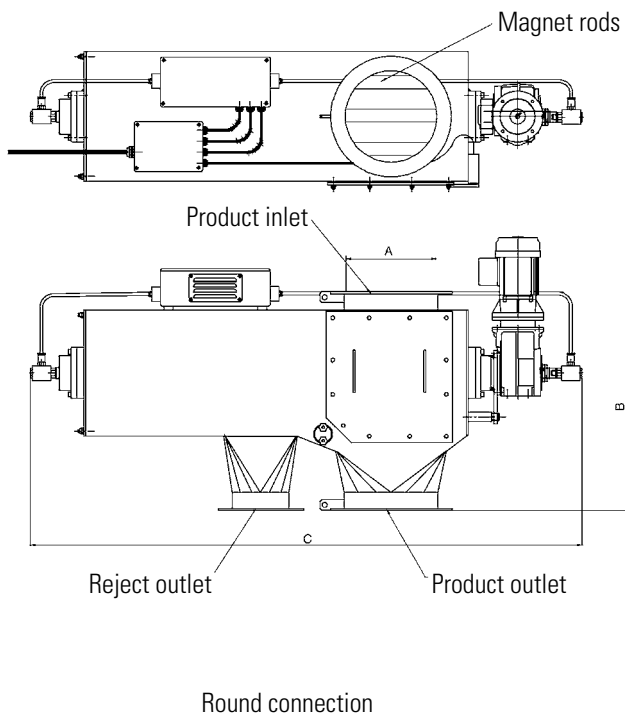
Cleaning is performed automatically: Compressed-air is applied to the magnet cores, which then in their stainless steel casings are transported to the cleaning area. With its extremely high magnetic power (13700 Gauss) this magnet system even removes slightly magnetised stainless steel particles from the product flow. With a PLC controller the cleaning intervals can be set according to the respective level of contamination. The new "shuttle core" design ensures a compact system design without any directly moved system components.

**For the inspection of:** Bulk materials; dry, non-free-flowing (bridging), powdery, fine-grained (grain size < 6 mm), coarse-grained (grain size > 6 mm), flaky, fibrous, crumbly

**For installation in:** Free-fall/bulk conveyors

**For application in:** Plastics industry  
Food industry  
Chemical industry  
Pharmaceutical industry  
Wood industry  
Recycling industry  
Other industry sectors

## Dimensions



## Technical data

RXA, round	Gauss *	Version	Article	Connection diameter A				
Neodymium N45	9000	Auto Clean	RXA9-	0200	0250	0300	0350	0400
Installation height B				450	500	550	600	650
Installation length C				1415	1540	1665	1790	1915
Number of magnet rods				6	7	9	10	13
Throughput capacity [m³/h]				19	30	39	48	60
Weight [kg]				105	120	135	150	165

RXA, square	Gauss *	Version	Article	Connection dimension, square A				
Neodymium N45	9000	Auto Clean	RXA9-R-	0200	0250	0300	0350	0400
Installation height B				450	500	550	600	650
Installation length C				1415	1540	1665	1790	1915
Number of magnet rods				6	7	9	10	13
Throughput capacity [m³/h]				24	38	49	60	75
Weight [kg]				100	112	126	142	155

\* : Measured at the effective surface of the stainless steel tube

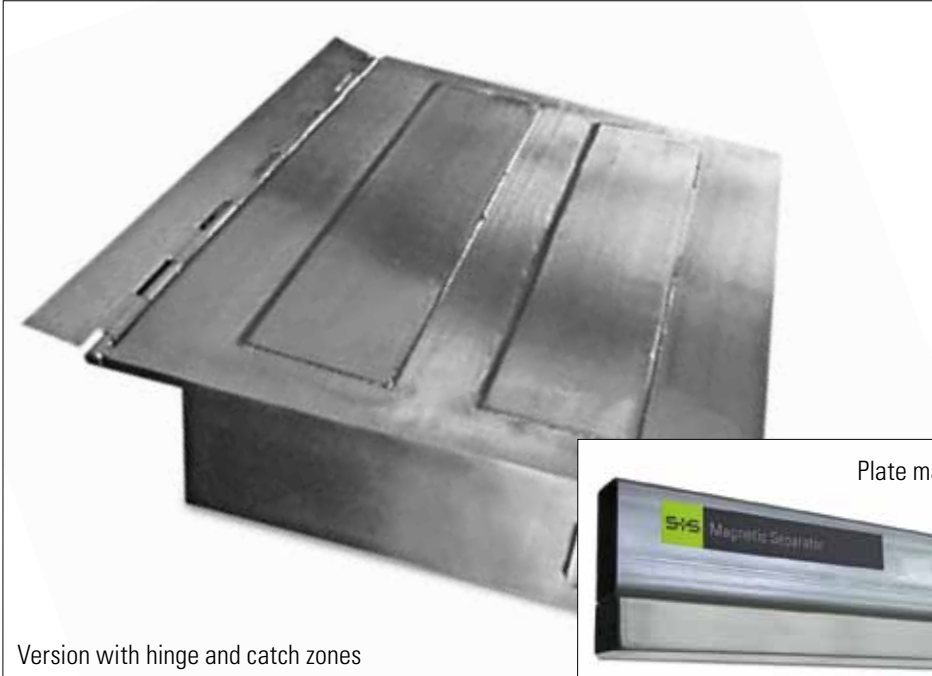
Article number: Combination of "Article" and "Dimension A" (e.g. RXA9-0200)

All dimensions in mm



# PM

## Plate magnet



Version with hinge and catch zones



Plate magnet version for the textile industry

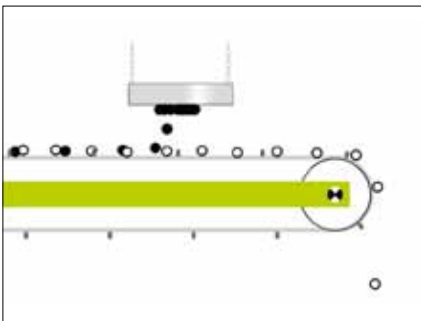


Plate magnets are installed in a continuous material flow above conveyor lines, in free fall, in vertical or inclined pipes, under chutes and slideways, etc.

For protection against damage and for easier cleaning all the plate magnets are fully encased with stainless steel.

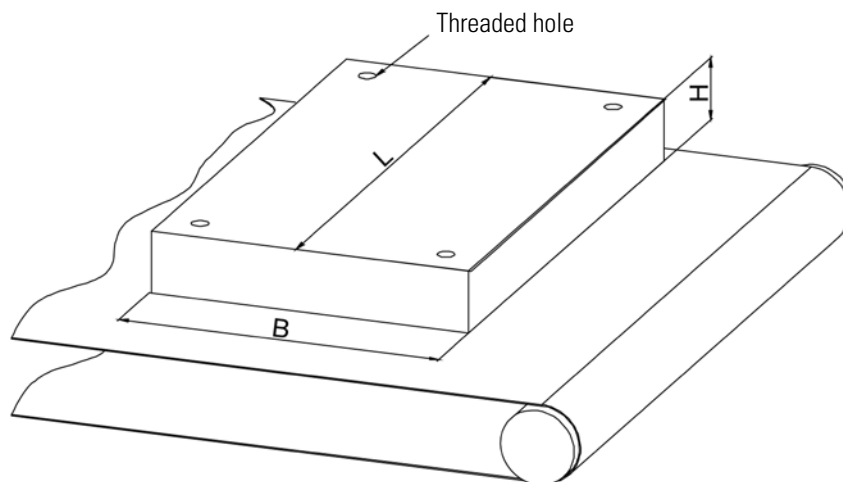
**For the inspection of:** Piece goods (incl. packaged items - e.g. packaged bulk materials), bulk materials, sheet materials; dry, non-free-flowing (bridging), powdery, fine-grained (grain size < 6 mm), coarse-grained (grain size > 6 mm), flaky, slightly fibrous, crumbly, moist

**For installation in:** Conveyor belts  
Conveyor belt lines  
Chutes  
Vibration chute conveyors

**For application in:** Plastics industry  
Food industry  
Chemical industry  
Pharmaceutical industry  
Textile industry  
Wood industry  
Recycling industry  
Packaging industry  
Other industry sectors



## Dimensions

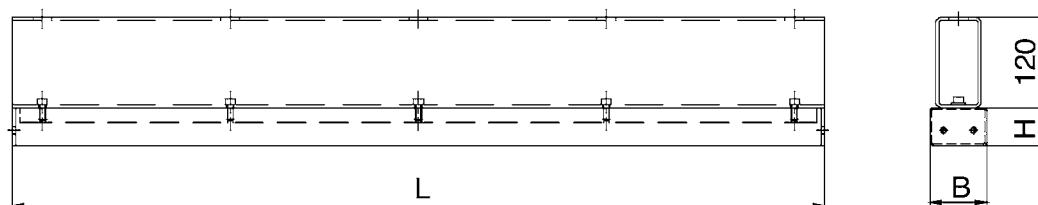


## Technical data

	Working gap*	Installation width B	Installation height H	Article	Length L										
					---	0200	0300	0400	0500	0600	0700	0800	0900	1000	
<b>Ferrite</b>	90	200	100	PMF-	---	0200	0300	0400	0500	0600	0700	0800	0900	1000	
	180	400	200		---	---	---	---	---	---	---	---	---	---	---
	270	800	300		---	---	---	---	---	---	---	---	---	---	---
<b>Weight [kg]</b>	90				---	26	39	52	65	82	95	107	120	133	
	180				---	---	163	214	265	315	370	421	472	522	
	270				---	---	---	489	607	724	846	964	1081	1199	

	Working gap*	Installation width B	Installation height H	Article	Length L									
					0100	0200	0300	0400	0500	0600	0700	0800	0900	1000
<b>Neodymium N35</b>	80	100	50	PMN-	0100	0200	0300	0400	0500	0600	0700	0800	0900	1000
<b>Weight [kg]</b>					2,5	5,0	7,5	10,0	12,5	15,0	17,5	20,0	22,5	25,0

## Version for the textile industry\*\*:



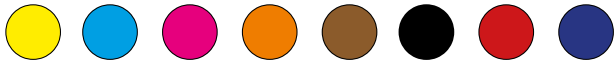
	Working gap*	Installation width B	Installation height H	Article	Length L									
					---	1000	1500	2000	2500	3000	3500	4000	4500	5000
<b>Ferrite</b>	30	75	50	PMT-	---	1000	1500	2000	2500	3000	3500	4000	4500	5000
<b>Neodymium</b>				PMTN-	---	---	---	---	---	---	---	---	---	---
<b>Weight [kg]</b>					---	40	60	80	100	120	140	160	180	200

\* : (relating to a  $\varnothing$  5x25 mm mild steel bar)

\*\* : PMT additionally with: Carrier profile 60 x 120 mm, painted in RAL 9007

Article number: Combination of "Article" and "Length L" (e.g. PMF-0200)

All dimensions in mm



# PRM

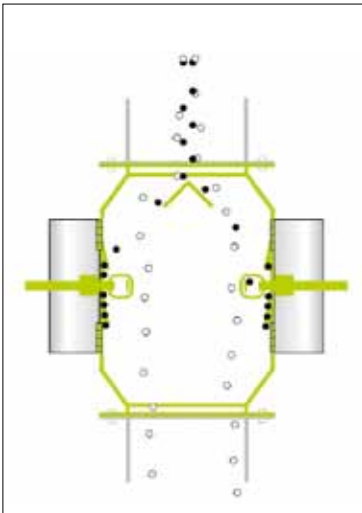
## Inline chute magnet for free-fall applications (poor free-flowing, bridging products)



EASY CLEAN version



AUTO CLEAN version



These inline chute magnets primarily are used for the magnetic separation of slightly "bridging" and fibrous products, because there are no disturbing obstacles in the product flow. They also have proven to be an excellent solution for applications with very high throughput capacities and for pressure conveyor pipes.

**EASY CLEAN:** Hinged stainless steel plates facilitate cleaning of the magnet blocks.

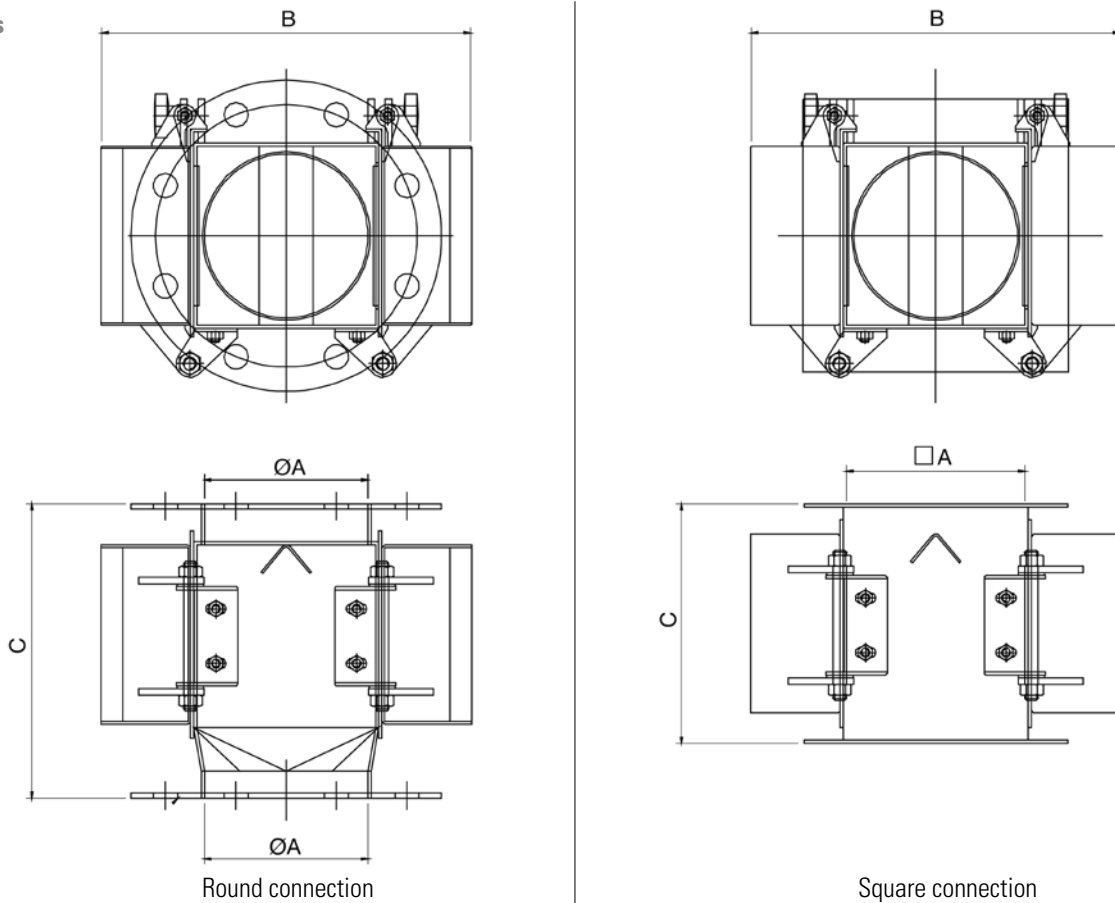
**OPTION: AUTO CLEAN -** The magnet plates are swivelled out by means of pneumatic cylinders.

**For the inspection of:** Bulk materials; dry, non-free-flowing (bridging), powdery, fine-grained (grain size < 6 mm), coarse-grained (grain size > 6 mm), flaky, fibrous, crumbly, moist

**For installation in:** Free-fall/bulk conveyors

**For application in:** Plastics industry  
Food industry  
Chemical industry  
Textile industry  
Wood industry  
Recycling industry  
Packaging industry  
Other industry sectors

## Dimensions



## Technical data

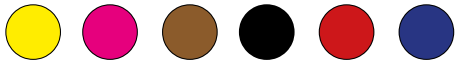
Round	Gauss*	Version	Article	Connection diameter A					
				0100	0150	0200	0250	0300	0350
Ferrite	2000	Standard	PRMF-						
	1200	+ Easy Clean	PRMF-E-						
Neodymium N35	3500	Standard	PRMN-						
	2500	+ Easy Clean	PRMN-E-						
<b>Installation width B</b>				230	280	330	380	430	500
<b>Installation height C</b>				240	270	270	370	370	500
<b>Throughput capacity [m³/h]</b>				20	30	55	84	111	150
<b>Weight [kg]</b>				18	24	32	42	56	85

Square	Gauss*	Version	Article	Connection dimension, square A					
				0100	0150	0200	0250	0300	0350
Ferrite	2000	Standard	PRMF-R						
	1200	+ Easy Clean	PRMF-ER-						
Neodymium N35	3500	Standard	PRMN-R						
	2500	+ Easy Clean	PRMN-ER-						
<b>Installation width B</b>				210	260	310	360	410	460
<b>Installation height C</b>				190	220	220	320	320	400
<b>Throughput capacity [m³/h]</b>				25	35	67	102	134	170
<b>Weight [kg]</b>				17	22	30	39	52	80

\*: Measured at the effective surface

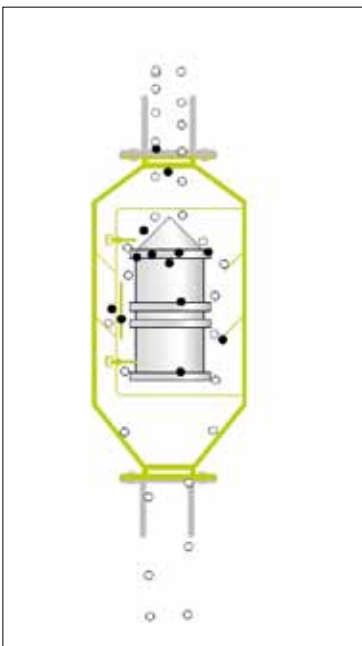
Article number: Combination of "Article" and "Dimension A" (e.g. PRMF-0100)

All dimensions in mm



## RM

### Inline magnet for free-fall applications (poor free-flowing products)



RM inline magnet separators are installed in pipes for the thorough separation of ferrous metals from powdery and grainy bulk materials. The housing and the cone tip of the magnet core are made of rust-proof stainless steel (1.4301).

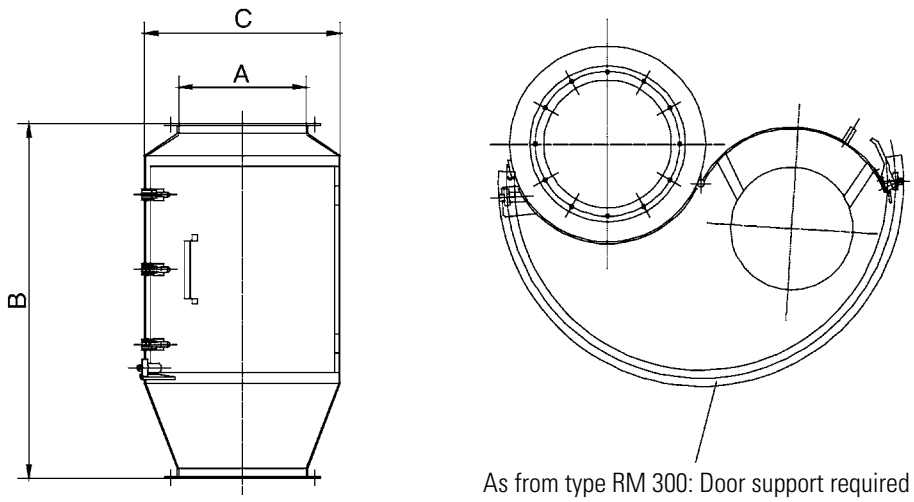
The system dimensions are chosen such that good material can freely pass between core and housing even if contaminants have accumulated at the magnet core.

**For the inspection of:** Bulk materials; dry, non-free-flowing (bridging), powdery, fine-grained (grain size < 6 mm), coarse-grained (grain size > 6 mm), flaky, fibrous, crumbly

**For installation in:** Free-fall/bulk conveyors

**For application in:** Plastics industry  
Chemical industry  
Wood industry  
Recycling industry  
Packaging industry  
Other industry sectors

## Dimensions



## Technical data

	Article	Connection diameter A							
		0100	0150	0200	0250	0300	0350	0400	0500
<b>Ferrite</b>	RMF-								
<b>Neodymium N45</b>	RMN-					---	---	---	---
<b>Installation height B</b>		580	655	760	850	880	1000	1100	1200
<b>Installation width C</b>		224	279	351	436	491	551	608	788
<b>Throughput capacity* [m³/h]</b>		10	35	85	130	200	220	260	310
<b>Weight [kg]</b>		23	38	70	115	145	190	240	395

\*: Throughput capacity data are for dry, free-flowing bulk material (grain size < 6 mm)

Article number: Combination of "Article" and "Dimension A" (e.g. RMF-0100)

All dimensions in mm

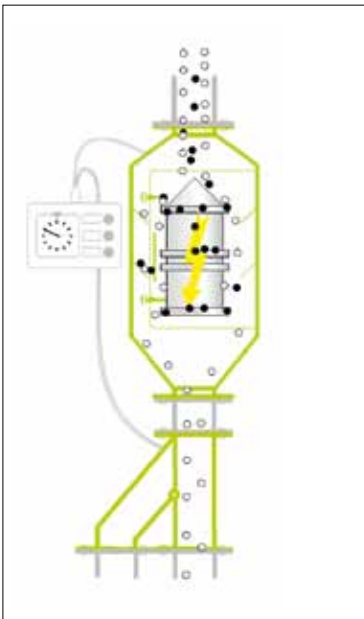


## RME

### Inline magnet system for free-fall applications (electromagnetic)



Version with reject mechanism



RME inline magnet systems are installed in pipes for the thorough separation of ferrous metals from various types of bulk materials. This type performs separation by means of an electromagnetic field. Cleaning for example is performed by way of a controller that deactivates the electromagnetic field as soon as a pneumatically operated valve is locked in "cleaning" position.

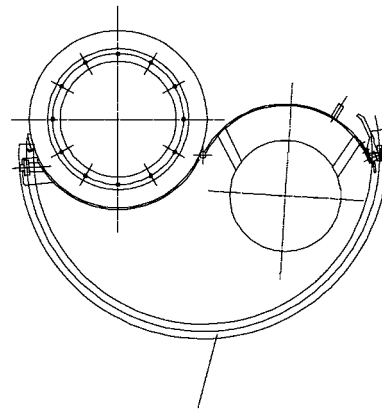
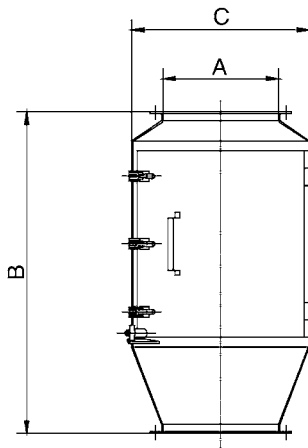
The dimensions of this electromagnetic inline magnet version also are chosen such that good material can freely pass between core and housing even if contaminants have accumulated at the magnet core.

**For the inspection of:** Bulk materials; dry, non-free-flowing (bridging), powdery, fine-grained (grain size < 6 mm), coarse-grained (grain size > 6 mm), flaky, fibrous, crumbly

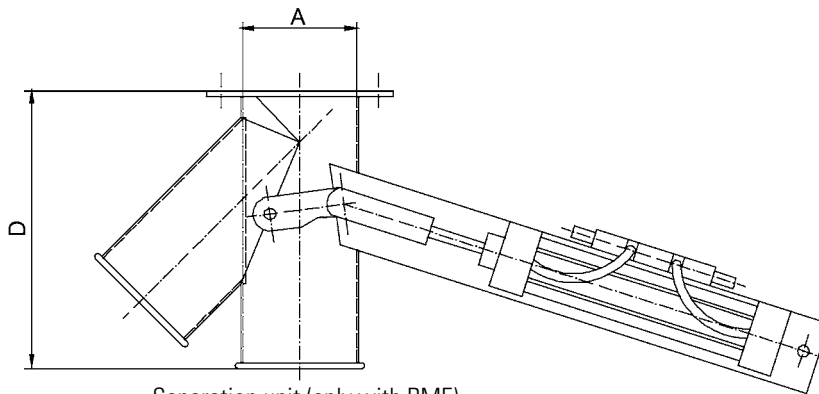
**For installation in:** Free-fall/bulk conveyors

**For application in:** Plastics industry  
Chemical industry  
Wood industry  
Recycling industry  
Other industry sectors

## Dimensions



As from type RME 300: Door support required



Separation unit (only with RME)

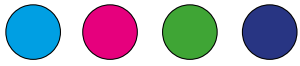
## Technical data

	Article	Connection diameter A							
		0100	0150	0200	0250	300	350	0400	0500
<b>Electromagnet (incl. controller)</b>	RME-								
<b>Installation height B (without separation unit)</b>		580	655	760	850	880	1000	1100	1200
<b>Installation height B+D (with separation unit)</b>		825	950	1145	1320	1440	1725	1780	2040
<b>Installation width C</b>		224	279	351	436	491	551	608	788
<b>Throughput capacity* [m³/h]</b>		10	35	85	130	200	220	260	310
<b>Magnet power [kW]</b>		0,12	0,15	0,20	0,30	0,40	0,50	0,60	0,85
<b>Weight [kg] (without separation unit)</b>		25	40	85	140	186	245	355	590

\*: Throughput capacity data are for dry, free-flowing bulk material (grain size < 6 mm)

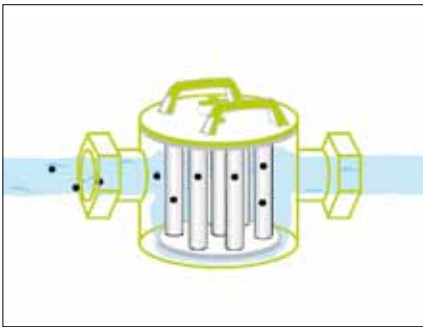
Article number: Combination of "Article" and "Dimension A" (e.g. RME-0100)

All dimensions in mm



# LIQUIMAG

## Filter magnet for liquid/pasty materials



LIQUIMAG filter magnets were specifically developed and designed to reliably remove even smallest magnetic contaminants from various types of liquid and pasty products.

With their extremely high magnetic power these filter magnets even remove slightly magnetised stainless steel particles from the product flow.

EASY CLEAN guarantees efficient and fast cleaning of the filter magnet.

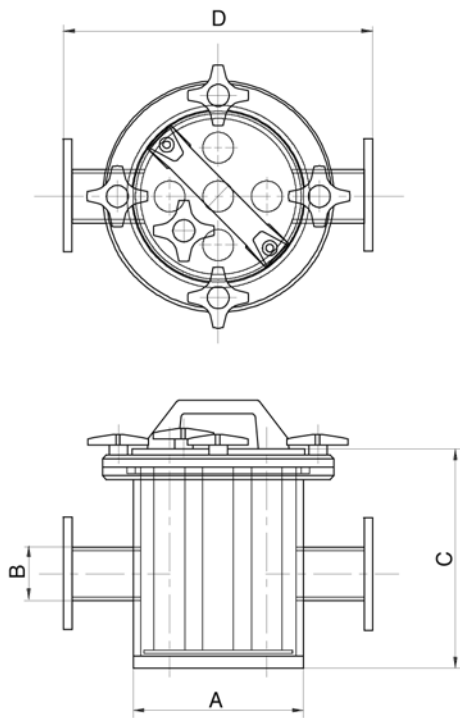
**For the inspection of:** Liquid/pasty materials (constant consistency)

**For installation in:** Pump conveyor pipes

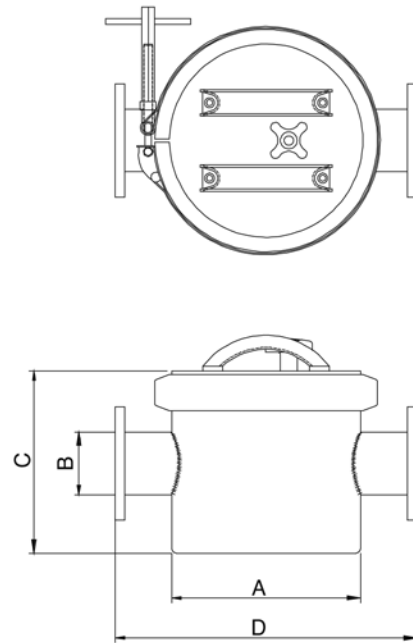
**For application in:** Food industry  
Chemical industry  
Pharmaceutical industry  
Other industry sectors



## Dimensions



Versions LM9-E-040-3 and LM9-E-050-5



Versions as from LM9-E-050-7

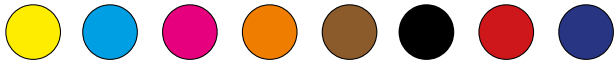
## Technical data

Magnet material	Gauss*	Version	Article	Connection diameter B						
				40	50	50	75	50	75	100
Neodymium N45	11000	Standard	LM9-	40	50	50	75	50	75	100
	9000	+ Easy Clean	LM9-E-							
	11000	double-walled	LM9-D-							
	9000	+ Easy Clean	LM9-ED-							
<b>Housing diameter A</b>				125	160	200	200	300	300	300
<b>Installation height C</b>				155	180	200	200	300	300	300
<b>Installation length D</b>				250	270	350	350	450	450	450
<b>Number of magnet rods</b>				3	5	7	7	9	9	9
<b>Throughput capacity [m³/h]</b>				4	9	19	44	23	52	78
<b>Weight [kg]</b>				8	14	22	22	55	55	55

\* : Measured at the effective surface of the stainless steel tube

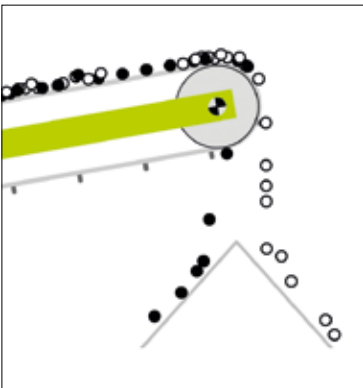
Article number: Combination of "Article" and "Connection diameter + number of magnet rods" (e.g. LM9-40-3)

All dimensions in mm



# WM

## Head roller magnet system



The permanent-magnet head roller is designed to replace the drive roller at the discharge end of a conveyor belt. This primary system separates medium-sized and coarse ferrous contaminants.

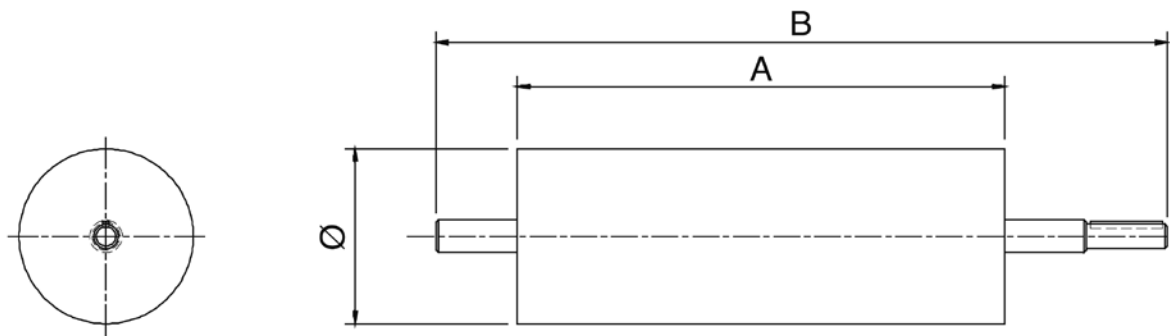
All the head roller versions are available with smooth, crowned, or rubber-coated shell design.

**For the inspection of:** Bulk materials; dry, powdery, fine-grained (grain size < 6 mm), coarse-grained (grain size > 6 mm), flaky, fibrous, crumbly, moist

**For installation in:** Conveyor belts  
Conveyor belt lines

**For application in:** Plastics industry  
Food industry  
Chemical industry  
Textile industry  
Wood industry  
Recycling industry  
Packaging industry  
Other industry sectors

## Dimensions



## Technical data

Series 1	Gauss*	working gap**	Diameter	Article	Roller width A					
Ferrite	1000	75	215	WMF-	0400	0500	0600	0700	0800	1000
Neodymium N35	3000	75	215	WMN-	0400	0500	0600	0700	0800	1000
<b>Total width B</b>					700	800	900	1000	1100	1300
<b>Weight [kg]</b>					64	77	90	104	123	151

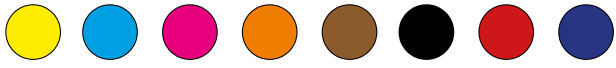
Series 2	Gauss*	working gap**	Diameter	Article	Roller width A					
Ferrite	1000	100	315	WMF-	0400	0500	0600	0700	0800	1000
Neodymium N35	3000	100	315	WMN-	0400	0500	0600	0700	0800	1000
<b>Total width B</b>					700	800	900	1000	1100	1300
<b>Weight [kg]</b>					125	148	171	194	217	271

\* : Measured at the effective surface of the roller

\*\* : relating to a Ø 5x25 mm mild steel bar

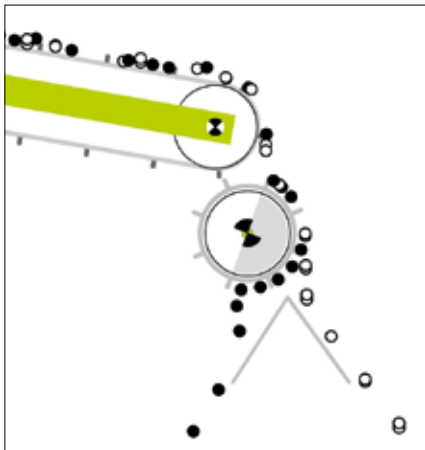
Article number: Combination of "Article" and "Roller width" (e.g. WMF-0400)

All dimensions in mm



# TM

## Drum magnet system



The drum magnet is an automated separating system. Ferrous contaminants are attracted to the drum magnet and then rotated out of the magnetic field where they fall off the drum and are separated from clean products by a diverter shield (option).

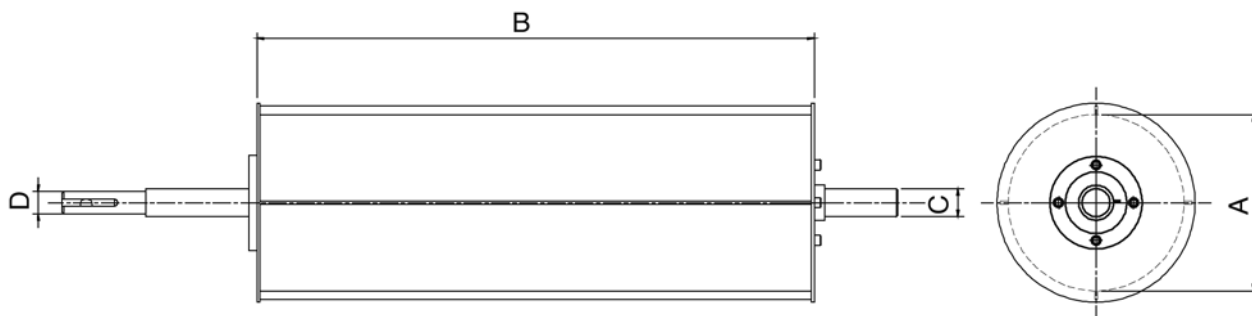
The magnetic field can be positioned such that the passing material flow is optimally separated.

**For the inspection of:** Bulk materials; dry, non-free-flowing (bridging), powdery, fine-grained (grain size < 6 mm), coarse-grained (grain size > 6 mm), flaky, light, fibrous, crumbly, moist

**For installation in:** Free-fall/bulk conveyors  
Conveyor belts  
Vibration chute conveyors

**For application in:** Plastics industry  
Food industry  
Chemical industry  
Textile industry  
Wood industry  
Recycling industry  
Packaging industry  
Other industry sectors

## Dimensions



### Technical data

Series 1	Gauss *	Diameter A	Article	Drum width B				
				0400	0500	0600	0800	1000
Ferrite	1200	215	TMF-	0400	0500	0600	0800	1000
Neodymium N35	3500	215	TMN-	0400	0500	0600	0800	1000
Shaft Ø C				40				
Shaft Ø D				25	25	25	25	25
Throughput capacity [m³/h]				28	35	43	59	70
Weight [kg]				60	72	84	108	132

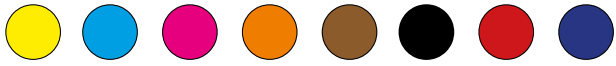
Series 2	Gauss *	Diameter A	Article	Drum width B				
				0400	0500	0600	0800	1000
Ferrite	1200	315	TMF-	0400	0500	0600	0800	1000
Neodymium N35	3500	315	TMN-	0400	0500	0600	0800	1000
Shaft Ø C				40				
Shaft Ø D				25	25	25	35	35
Throughput capacity [m³/h]				40	50	62	85	100
Weight [kg]				82	94	108	136	154

Series 3	Gauss *	Diameter A	Article	Drum width B				
				0400	0500	0600	0800	1000
Ferrite	1200	400	TMF-	0400	0500	0600	0800	1000
Neodymium N35	3500	400	TMN-	0400	0500	0600	0800	1000
Shaft Ø C				50				
Shaft Ø D				25	25	35	40	40
Throughput capacity [m³/h]				52	64	76	102	124
Weight [kg]				125	140	155	185	215

\* : Measured at the effective surface of the drum

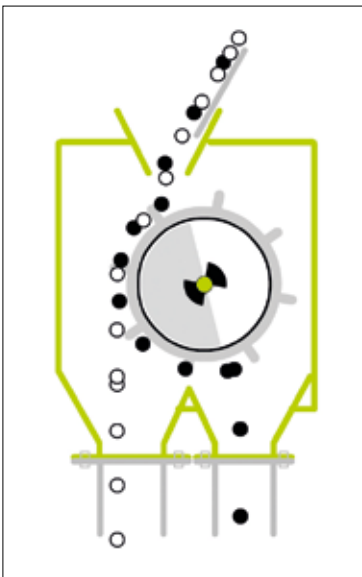
Article number: Combination of "Article" and "Drum width" (e.g. TMF-0400)

All dimensions in mm



# TMG

## Drum magnet system in a housing



The drum magnet is an automated separating system. The separating drum is driven by an angular gear motor, its speed can be controlled with an optional frequency inverter.

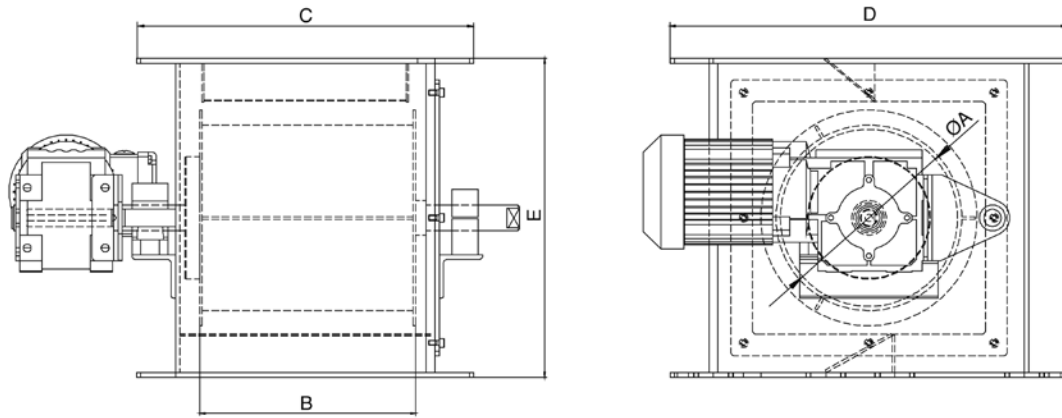
The magnetic field can be positioned such that the passing material flow is optimally separated. With customer-specific connection dimensions this complete solution can be easily integrated in existing conveyor systems.

**Untersuchung von:** Bulk materials; dry, non-free-flowing (bridging), powdery, fine-grained (grain size < 6 mm), coarse-grained (grain size > 6 mm), flaky, fibrous, crumbly, moist

**Installation in:** Free-fall/bulk conveyors  
Conveyor belts  
Vibration chute conveyors

**Verwendung in:** Plastics industry  
Food industry  
Chemical industry  
Textile industry  
Wood industry  
Recycling industry  
Packaging industry  
Other industry sectors

## Dimensions



## Technical data

Series 1	Gauss *	Diameter A	Article	Drum width B				
				0400	0500	0600	0800	1000
Ferrite	1200	215	TMGF-	0400	0500	0600	0800	1000
Neodymium N35	3500	215	TMGN-	0400	0500	0600	0800	1000
Installation width C				610	710	810	1010	1210
Installation depth D				555				
Installation height E				425				
Motor power [kW]				0,18	0,18	0,18	0,37	0,37
Drum speed [U/min]				28	28	28	35	35
Throughput capacity [m³/h]				28	35	43	59	70
Weight [kg]				125	140	155	190	225

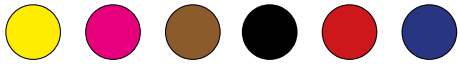
Series 2	Gauss *	Diameter A	Article	Drum width B				
				0400	0500	0600	0800	1000
Ferrite	1200	315	TMGF-	0400	0500	0600	0800	1000
Neodymium N35	3500	315	TMGN-	0400	0500	0600	0800	1000
Installation width C				610	710	810	1010	1210
Installation depth D				655				
Installation height E				525				
Motor power [kW]				0,18	0,37	0,37	0,37	0,37
Drum speed [U/min]				28	35	35	29	29
Throughput capacity [m³/h]				40	50	62	85	100
Weight [kg]				165	185	205	250	285

Series 3	Gauss *	Diameter A	Article	Drum width B				
				0400	0500	0600	0800	1000
Ferrite	1200	400	TMGF-	0400	0500	0600	0800	1000
Neodymium N35	3500	400	TMGN-	0400	0500	0600	0800	1000
Installation width C				610	710	810	1010	1210
Installation depth D				740				
Installation height E				610				
Motor power [kW]				0,37	0,37	0,37	0,55	0,55
Drum speed [U/min]				35	35	29	29	29
Throughput capacity [m³/h]				52	64	76	120	124
Weight [kg]				225	245	270	330	380

\* : Measured at the effective surface of the drum

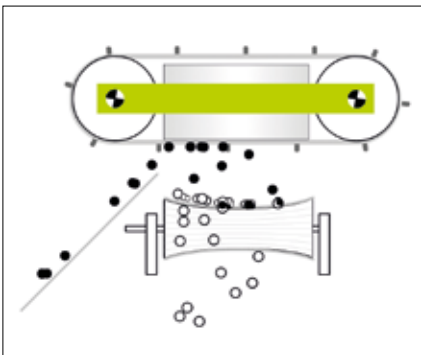
Article number: Combination of "Article" and "Drum width" (e.g. TMGF-0400)

All dimensions in mm



# OM

## Overband magnet system



Overband magnets are equipped with a strong permanent magnet made of fully stabilised strontium-ferrite magnet material. As a standard the recirculating belt is powered by an attachable gear motor. Ferrous contaminants are continuously picked up and then removed by the circulating belt.

As an option the sturdy system also can be equipped with a hydraulic drive. Guards on both sides prevent injuries and damage to the recirculating belt.

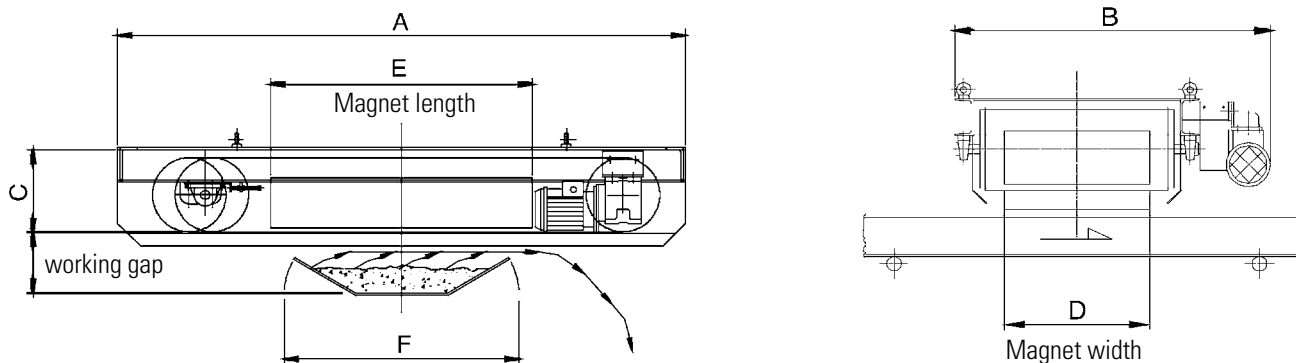
**For the inspection of:** Piece goods (incl. packaged items - e.g. packaged bulk materials), bulk materials; dry, non-free-flowing (bridging), powdery, fine-grained (grain size < 6 mm), coarse-grained (grain size > 6 mm), flaky, fibrous, crumbly, moist, liquid/pasty (constant consistency)

**For installation in:** Conveyor belts  
Conveyor belt lines  
Vibration chute conveyors

**For application in:** Plastics industry  
Chemical industry  
Wood industry  
Recycling industry  
Packaging industry  
Other industry sectors



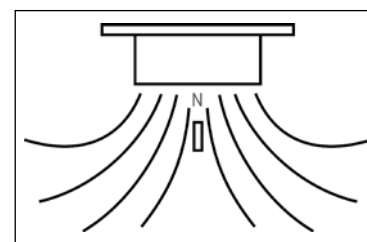
## Dimensions



## Technical data

### Magnets in "single pole design"

Series 200	working gap*	Article	Conveyor belt width F			
			0600	0800	1000	1200
Ferrite	200	OMS-				
<b>Total length A</b>			1790	1990	2190	2390
<b>Total width B</b>			1250			
<b>Total height C</b>			440			
<b>Magnet width D</b>			430			
<b>Magnet length E</b>			632	836	1040	1244
<b>Motor power [kW]</b>			1,5	1,5	1,5	1,5
<b>Weight [kg]</b>			800	960	1080	1200



„single pole design“

Series 250	working gap*	Article	Conveyor belt width F						
			0600	0800	1000	1200	1400	1600	1800
Ferrite	250	OMS-							
<b>Total length A</b>			1790	1990	2190	2390	2590	2790	3040
<b>Total width B</b>			1250						
<b>Total height C</b>			440						
<b>Magnet width D</b>			530						
<b>Magnet length E</b>			632	836	1040	1244	1448	1652	1856
<b>Motor power [kW]</b>			1,5	1,5	1,5	1,5	1,5	1,5	1,5
<b>Weight [kg]</b>			900	1049	1200	1355	1512	1673	1837

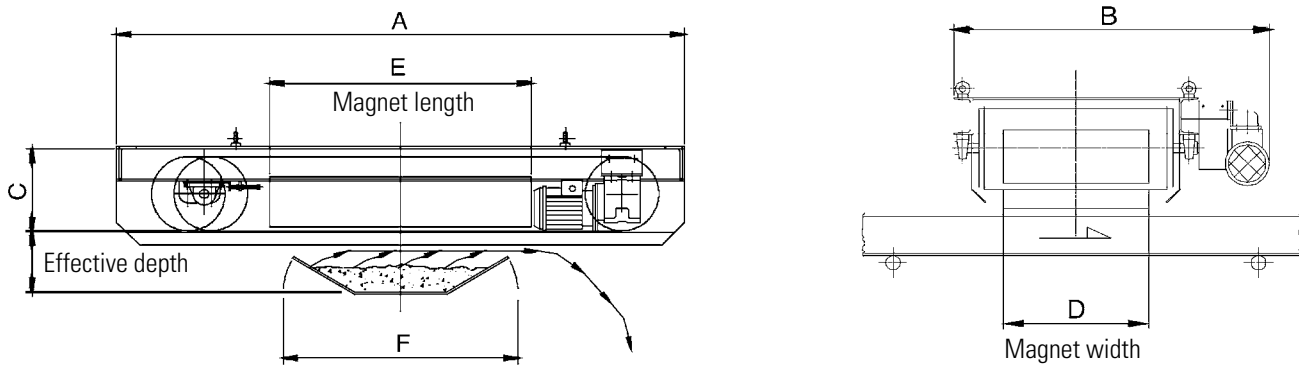
Series 300	working gap*	Article	Conveyor belt width F						
			0600	0800	1000	1200	1400	1600	1800
Ferrite	300	OMS-							
<b>Total length A</b>			2066	2266	2466	2666	2866	3066	3266
<b>Total width B</b>			1300						
<b>Total height C</b>			530						
<b>Magnet width D</b>			520						
<b>Magnet length E</b>			632	836	1040	1244	1448	1652	1856
<b>Motor power [kW]</b>			1,5	1,5	1,5	2,2	2,2	2,2	2,2
<b>Weight [kg]</b>			1270	1484	1709	1945	2192	2452	2726

\*: (relating to a  $\varnothing$  5x25 mm mild steel bar)

Article number: Combination of "Article" and "Conveyor belt width" (e.g. OMS-0600)

All dimensions in mm

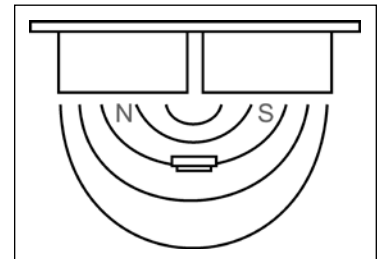
## Dimensions



## Technical data

### Magnets in "twin pole design":

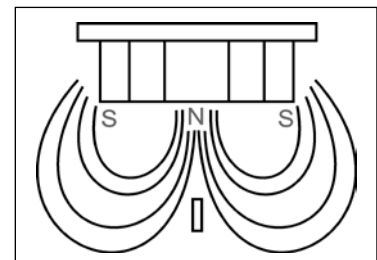
Series 250	working gap*	Article	Conveyor belt width F			
			0800	1000	1200	1400
Ferrite	250	OMT-				
<b>Total length A</b>			1990	2190	2390	2590
<b>Total width B</b>			1250			
<b>Total height C</b>			390			
<b>Magnet width D</b>			672			
<b>Magnet length E</b>			836	1040	1244	1444
<b>Motor power [kW]</b>			1,5	1,5	1,5	2,2
<b>Weight [kg]</b>			1400	1600	1800	2000



„twin pole design“

### Magnets in "multi pole design":

Series 300	working gap*	Article	Conveyor belt width F					
			0800	1000	1200	1400	1600	1800
Ferrite	300	OMM-						
<b>Total length A</b>			2416	2616	2816	3016	3216	3416
<b>Total width B</b>			1700					
<b>Total height C</b>			572					
<b>Magnet width D</b>			971					
<b>Magnet length E</b>			820	1025	1227	1430	1632	1834
<b>Motor power [kW]</b>			1,5	1,5	2,2	2,2	3,0	3,0
<b>Weight [kg]</b>			2400	2842	3291	3746	4208	4677



„multi pole design“

\* : (relating to a Ø 5x25 mm mild steel bar)

Article number: Combination of "Article" and "Conveyor belt width" (e.g. OMT-0600)

All dimensions in mm

# Annex



## ATEX – certified safety

Since 1 July 2003 all equipment and safety systems for use in potentially explosive environments must comply with EC directive 94/9/EC. With this directive the European Union established a basis for binding, uniform explosion prevention standards for the design, installation and maintenance of systems, machinery and components. Explosive atmospheres may occur in a number of industries, such as e.g. the chemical, pharmaceutical and food industries. Mills and storage areas for milled products, where flammable dust is generated, are one example in the food sector. All systems, machinery and components that are used in such environments must be approved under this EC directive.



In the year 2005 S+S developed the world-wide first automated magnet system ROTOBX AUTO CLEAN that is certified according to the ATEX directive zone 20. Since July 2006 almost all magnet systems have an EC type examination certificate. S+S thus is able to provide various magnet systems for use in ATEX zones 20 (dust) and 0 (gas).

The continuously growing number of systems for ATEX applications and the extensive experience we have gathered with the most varied kinds of implemented solutions give our customers the comforting safety and certainty to have found a competent and reliable supplier with S+S

### Important definitions

#### Potentially explosive atmosphere:

- 1. A mixture of air and combustible substances in the form of gases, vapours, mists or dusts**
- 2. under atmospheric conditions**
- 3. in which, after ignition has occurred, combustion spreads to the entire unburned mixture**



Please fax this checklist together with your inquiry to: +49 8554 2606

# ATEX-Checklist for magnets

## Necessary data for areas subject to explosion hazards



### 1. Hazardous materials:

Decisive hazardous materials: \_\_\_\_\_  
 Grain size (median value) mm: \_\_\_\_\_  
 Conveying speed [m/s] / direction: \_\_\_\_\_  
 Product temperature [°C]: \_\_\_\_\_  
 Pressure in the conveyor pipe [bar]: \_\_\_\_\_  
 Minimum ignition energy [mJ]: \_\_\_\_\_  
 Maximum size [mm] / maximum weight [g] of metal particles: \_\_\_\_\_  
 Other sizes: \_\_\_\_\_  
 Ignition temperature [°C]: \_\_\_\_\_  
 Smouldering temperature [°C]: \_\_\_\_\_  
 Ambient temperature [°C]: \_\_\_\_\_ from \_\_\_\_\_ to \_\_\_\_\_  
 Conductive dust?  yes  no  
 Thickness of dust deposits [mm]: \_\_\_\_\_

### 2. Danger zones:

#### Inside:

- Zone 20 (dust)
- Zone 21 (dust)
- Zone 22 (dust)
- Zone 0 (gas)
- Zone 1 (gas)
- Zone 2 (gas)

#### Outside:

- Zone 20 (dust)
- Zone 21 (dust)
- Zone 22 (dust)
- Zone 0 (gas)
- Zone 1 (gas)
- Zone 2 (gas)

### 3. Equipment version to be supplied:

Magnet separator: \_\_\_\_\_ Ex II \_\_\_\_\_ T \_\_\_\_\_ °C \_\_\_\_\_ or \_\_\_\_\_  
 Control Unit in zone: \_\_\_\_\_ Ex II \_\_\_\_\_ T \_\_\_\_\_ °C \_\_\_\_\_ or \_\_\_\_\_

### 4. Basic minimum requirements:

EC directive: 94/9/EC \_\_\_\_\_  
 EN/VDE: \_\_\_\_\_

### 5. Other information:

\_\_\_\_\_  
 \_\_\_\_\_  
 \_\_\_\_\_

### 6. Confirmation:

**Customer:**

**Date:**

**Operator:**

**Signature:**

Signature of the person in charge of assessing the respective plant

**Attention:**

**Your inquiry can only be processed if all the required data are available!**

### Information on the signatory:



Please fax this checklist together with your inquiry to: +49 8554 2606



# Checklist for magnet separators

## Necessary data for the project planning of magnet separators

### **1. Product properties:**

Material: \_\_\_\_\_  
 Grain size [mm]: \_\_\_\_\_ (min.) \_\_\_\_\_ (max.)  
 Throughput capacity [t/h]: \_\_\_\_\_ Density [kg/m³]: \_\_\_\_\_  
 Moisture [%]: \_\_\_\_\_ Product temperature [°C]: \_\_\_\_\_  
 Fall height [m]: \_\_\_\_\_ Static charging: \_\_\_\_\_  
 Free-flowing property: good \_\_\_\_\_ medium \_\_\_\_\_ bad \_\_\_\_\_  
 Product: tends to bridging \_\_\_\_\_ is statically charged \_\_\_\_\_ tends to caking \_\_\_\_\_  
 Special information: \_\_\_\_\_

### **2. Fe contaminations:**

Type of Fe contamination: \_\_\_\_\_  
 Free : \_\_\_\_\_ or embedded in the product: \_\_\_\_\_  
 Size [mm]: \_\_\_\_\_ (min.) \_\_\_\_\_ (max.)  
 Weight of contamination [g]: \_\_\_\_\_ (min.) \_\_\_\_\_ (max.)  
 Form: \_\_\_\_\_ Fe content [%]: \_\_\_\_\_  
 Special information: \_\_\_\_\_

### **3. Type of conveyor:**

Free fall height [mm]: \_\_\_\_\_ (max.) Pipe diameter [mm]: \_\_\_\_\_  
 Vacuum conveyor: \_\_\_\_\_ [mbar] \_\_\_\_\_ [m/s]  
 Pressure conveyor: \_\_\_\_\_ [mbar] \_\_\_\_\_ [m/s]  
 Pump conveyor: \_\_\_\_\_ [bar]  
 Conveyor belt: \_\_\_\_\_ [width in mm] \_\_\_\_\_ [m/s]  
 Vibration chute conveyor: \_\_\_\_\_ [width in mm]  
 Special information: \_\_\_\_\_

### **4. Operating conditions:**

Food industry: \_\_\_\_\_ Pharmaceutical industry: \_\_\_\_\_ Plastics industry: \_\_\_\_\_ Other: \_\_\_\_\_  
 Ambient temperature [° C]: \_\_\_\_\_ (min.) \_\_\_\_\_ (max.)  
 Dry/dusty: \_\_\_\_\_ Moist: \_\_\_\_\_ Wet: \_\_\_\_\_  
 Installation: Outdoor \_\_\_\_\_ or indoor \_\_\_\_\_  
 Mains supply connection: \_\_\_\_\_ [V] \_\_\_\_\_ [Hz]  
 ATEX zone: Inside \_\_\_\_\_, Outside \_\_\_\_\_ (please fill in the separate ATEX checklist)  
 Special information: \_\_\_\_\_

### **5. Other information:**

### **6. Confirmation:**

**Customer:**

**Date:**

**Operator:**

**Signature:**

Signature of the person in charge of assessing the respective plant

**Information on the signatory:**

**Attention:**

**Your inquiry can only be processed if all the required data are available!**



Please fax this checklist together with your inquiry to: +49 8554 2606

# Checklist for overband magnets

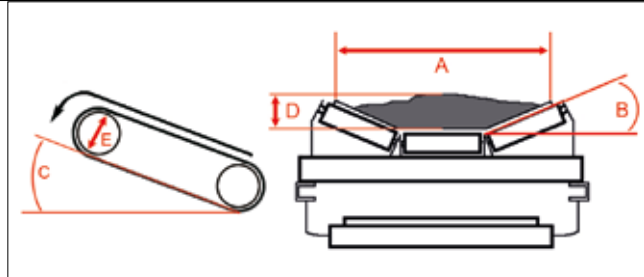
## Necessary data for the project planning of overband magnets

### 1. Product properties:

Material: \_\_\_\_\_  
 Grain size [mm]: \_\_\_\_\_ (min.) \_\_\_\_\_ (max.)  
 Throughput capacity [t/h]: \_\_\_\_\_ Density [kg/m<sup>3</sup>]: \_\_\_\_\_  
 Special information: \_\_\_\_\_

### 2. Conveyor belt (see drawing):

Belt width [mm]: \_\_\_\_\_ (A)  
 Speed [m/s]: \_\_\_\_\_  
 Trough angle [°]: \_\_\_\_\_ (B)  
 Elevation angle [°]: \_\_\_\_\_ (C)  
 Material height [mm]: \_\_\_\_\_ (D)  
 Deflection roller [Ø mm]: \_\_\_\_\_ (E)



### 3. Environmental conditions:

Ambient temperature [°C]: \_\_\_\_\_ (min.) \_\_\_\_\_ (max.)  
 Air humidity [%]: \_\_\_\_\_ (max.)  
 Altitude [m]: \_\_\_\_\_ (above mean sea level)  
 Special information: \_\_\_\_\_

### 4. Fe contaminations:

Type of Fe contamination: \_\_\_\_\_  
 Size [mm]: \_\_\_\_\_ (min.) \_\_\_\_\_ (max.)  
 Fe content [%]: \_\_\_\_\_  
 Equipment to be protected: \_\_\_\_\_  
 Fe parts that do not lead to damage: \_\_\_\_\_ (e.g. nuts, cubes, other shapes)  
 Subsequent use of good material: \_\_\_\_\_  
 Special information: \_\_\_\_\_

### 5. Version:

Cleaning: Automatic cleaning \_\_\_\_\_, Manual cleaning \_\_\_\_\_  
 Position: Crosswise discharge \_\_\_\_\_, Lengthwise discharge (via deflection roller) \_\_\_\_\_

### 6. Confirmation:

**Customer:**

**Date:**

**Operator:**

**Signature:**

Signature of the person in charge of assessing the respective plant

**Information on the signatory:**

**Attention:**  
 Your inquiry can only  
 be processed if all  
 the required data are  
 available!

Please observe the warning signs:



**"Warning: Magnetic Field"**  
acc. to BGV A8 W 13



**"Forbidden for people with cardiac pace-  
maker" acc. to BGV A8 P11**



# Application examples

## **S+S products:**

**Precision.**

**Versatility.**

**Economic  
Efficiency.**

**Individuality.**

Everything we do, we do with passion and conviction. We love to be challenged by difficult problems and to provide all our customers with optimal solutions for their specific requirements.

S+S solutions guarantee highest precision and reliable long-time operation as well as minimum efforts for care and maintenance.

For us our commitment in many industry sectors acts like an innovation motor. In the development of new systems and technologies S+S observes all the important industry standards (IFS, CSA/UL, ATEX, etc.).

Individual customer-specific projects always are a challenge and an incentive for new products, and the great experience that S+S has gathered from such projects defines our leading position.

## Application examples

# Food industry

## A. Saumweber GmbH, Munich / Germany

### Task

A. Saumweber GmbH in Munich, a family-run company with 50 employees, is a specialist for butter, fat, and oil. The product range comprises all the standard and special fat types for human consumption, e.g. butter and butterfat, margarine and margarine spread, vegetable fats and vegetable oils.

Quality and quality inspection are of outstanding importance for Saumweber, and the company attached great value to employing processes and technologies that are absolutely state-of-the-art. In order to meet the applicable standards and specifications for food production (e.g. IFS) Saumweber uses an S+S LIQUIMAG LM magnet separator.

The extremely high magnetic forces of the LIQUIMAG LM (13000 Gauss) make it possible to even separate slightly magnetised special-steel particles from the product flow.

The LIQUIMAG magnet separator is equipped with the proven EASY CLEAN feature. Because of the internal production sequences and the local conditions Saumweber decided to integrate the magnet separator in the pressure conveyor pipe shortly before the station where the material is filled in big packagings.



### Characteristics

- Fat and oil is conveyed in heated condition, the filling temperature is 20-30°C
- Throughput rates of up to 3 tons/hour can be reached
- Sturdy stainless steel design with polished surfaces



## Solution

In May 2006 S+S provided Saumweber with a LIQUIMAG magnet separator for test purposes, with the aim of finding out what types of metallic contaminants could be detected.

When the test period was over, Saumweber decided to permanently install the LIQUIMAG magnet separator.

In addition to the fulfilling of the main target, the easy integration of the system in the existing pressure conveyor pipe was another convincing argument.

The reliable function without any major maintenance, and the outstanding ease of operation of the magnet separator when it comes to cleaning, allow a highly efficient and economic operation.

## Advantages

- Even very fine magnetic particles (~ 10µm) are removed
- Reliable protection of final products
- The separated particles provide information about the source of contamination (e.g. machine wear)

## Result

The LIQUIMAG LM magnet separator clearly improved the production reliability of oil and fat products. Even very fine magnetic contaminants are detected and separated. Continuous product purity improvements are one reason why many customers have remained loyal to Saumweber for several decades.



For further information on this project please contact:

Jörg Lochmahr, S+S Area Sales Manager,  
Tel. +49 (0) 8441 787 - 662

Stephan Tremel,  
S+S Product Manager - Magnet Systems,  
Tel. +49 (0) 8554 308 - 183

## Application examples

# Chemical industry

## Alfons Greiwing GmbH, Wesel/Germany



### Task

Alfons Greiwing GmbH is a family-run internationally operating logistics company headquartered in Greven in the German Münsterland. In more than 75 years Greiwing has grown from a transport service provider into a logistics specialist for complete solutions with more than 380 employees at 5 locations.

When it comes to matters of quality, Greiwing is absolutely uncompromising. Work sequences and technology are permanently inspected and improved, and all the company sectors are certified according to DIN EN ISO 9001:2000.

At the Wesel location Greiwing specialises in bulk materials, providing high silo and hall storage facilities, handling, as well as silo and box container trans-shipment. With a silo truck Greiwing picks up the product at the customers' places and transfers it to a filler silo. Before the product – for example PE – is fed into the silos through vacuum and pressure conveyor pipes, it is examined for smallest Fe contaminations. For this application S+S supplied the PNEUMAG inline magnet.

### Solution

The PNEUMAG inline magnet was designed for applications in vacuum and pressure conveyor pipes involving higher flow rates (up to 25m/s). It is mainly used in the food and pharmaceutical industry for products such as flour, sugar, starch, pharmaceutical ingredients, and other fine-grained and powdery materials. The special design allows the product to flow through the system in both directions.

The PNEUMAG inline magnet features two rows of magnet rods in staggered arrangement. These magnet rods are made of high-energy neodymium N45 with an effective force of 9000 Gauss at the rod surface, which guarantees the reliable separation even of finest ferrous contaminants and magnetised stainless steel particles from the product flow.

As a standard the PNEUMAG inline magnet is equipped with the EASY CLEAN feature, which means that the magnet cores can be pulled out of the stainless steel casings, and all the separated contaminant material then falls off. This feature considerably facilitates and accelerates system cleaning.



### Characteristics

- The bulk material is conveyed in a pneumatic conveyor pipe
- Magnetic contaminations must be separated and reliably held back
- Maximum process reliability is required

### Advantages

- Fe separation already is performed when the silo trucks are unloaded, the Greiwing silo remains free of contamination
- Reliable protection of the silo systems

### Result

"The PNEUMAG inline magnets are characterized by their enormous magnetic force. Even finest Fe contaminations are reliably separated. Furthermore the S+S magnet can be installed in pneumatic conveyor pipes, and with the EASY CLEAN feature the system is very easy to clean. The use of these PNEUMAG inline magnets contributes to the guaranteeing of our high quality standards." (Quotation: Michael Scholtyssek, plant manager of Alfons Greiwing GmbH, Wesel).



For further information on this project please contact:

Stephan Tremel,  
S+S Product Manager - Magnet Systems,  
Tel. +49 (0) 8554 308-183

## Application examples

# Food industry

## Gebrüder Bagusat GmbH & Co. KG, Geretsried/ Germany

### Pure, metal-free fruit

#### Task

Gebrüder Bagusat GmbH & Co. KG is one of the leading manufacturers of fruit preparations in Germany. Based on half a century of experience and combined with creativity and flexibility, the company creates products as semi-finished goods for the ice-cream, baking, dairy, beverage, and chocolate industries, and finished goods for food retailers and for professional caterers. Business segments are divided into fruit preparations/purees, fruit in alcohol, and fresh convenience products (fruit salads).

Guaranteeing product quality and a sense of responsibility towards all the partners are of central importance in all the sectors. In a specifically developed quality management system every single production process – from the receipt of goods through to the final clearance of the end product – is meticulously monitored. By using first-class raw materials and gentle processing methods, supported by state-of-the-art computer systems and analysis technology, Bagusat reaches highest quality standards. For complying with the standards and specifications that are applicable in the food industry (e.g. HACCP), Bagusat has been using a magnet separator of type LIQUIMAG for years, in part combined with an S+S LIQUISCAN PL metal separator.



#### Solution

The extremely high magnetic forces of the LIQUIMAG reliably remove even slightly magnetised stainless steel particles from the product flow. The LIQUIMAG magnet separator is equipped with the proven EASY CLEAN feature that allows quick and easy cleaning. Due to the internal production sequences with frequent product changes, and to the space situation, the magnet separator operates as a mobile system at Bagusat.

After the magnet separator, the inductive metal separator LIQUISCAN PL separates non-magnetic metal particles and deflects such contaminations into a collecting vessel. The ball valve that is used here is especially suited for fruit preparations containing larger pieces. The metal separator can be easily integrated in existing pipes. State-of-the-art microelectronics with product auto teach function guarantee outstanding ease of operation.

## Characteristics

- The metal separators must be mobile because of frequent product changes
- Inspection of fruit preparations of differing viscosity and partly with large pieces that are difficult to inspect
- Sturdy, customer-specific design in stainless steel, mounted on mobile racks
- Used in different production stages, e.g. between process tank and customer container

## Advantages

- Finest magnetic particles (~10µm) are removed
- Reliable protection of the end products
- Time-saving, because the magnet separator can be cleaned in no time at all (no "dead zones")
- Minimum loss of good material, because the magnet separator "catches" all the magnetic metals, and the downstream inductive metal separator only has to separate non-magnetic metal particles.



## Result

Wolfgang Lischka, production manager at Gebrüder Bagusat GmbH & Co.KG: "The LIQUI-MAG magnet separator improves the product safety of our fruit preparations, because it even removes finest magnetic contaminations. Compared to other systems what we appreciate in these high-quality S+S systems are their outstanding ease of operation and their great reliability. The easy cleaning of this magnet separator, for example, saves us a lot of time when the places of operation frequently change. All these are good reasons for us to purchase more magnet separators."



For further information on this project please contact:

Stephan Tremel,  
S+S Product Manager - Magnet Systems,  
Tel. +49 (0) 8554 308-183

## Plastics industry

### Injection moulding

#### Task

A globally leading manufacturer of injection-moulded parts has always attached greatest importance to the subject of quality in all areas. Where quality is concerned, the company does not make any compromise, neither with respect to the safety of their products, nor with respect to their responsibility towards customers, manufacturers, consumers, and the environment. Quality is a fundamental criterion that is a central theme in the company's corporate philosophy and business policy. Quality assurance measures are defined in a global quality assurance system.

For plastics that for example are used in toys, the injection moulding company not only applies the same stringent standards that also are applicable for packagings in the food sector, but makes even further demands concerning the properties of the raw materials. The company operates its own plastics development laboratory and a test laboratory.

All the plastic articles bear the CE mark of the European Union. The company thereby guarantees that the respective product complies with the regulations of the EU directive for toys. Products for the US market must comply with the 'Code of Federal Regulation' and with the ASTM standard F963.

When the company experienced problems in the production process that were caused by metal contaminations in the plastics granulate, this was the starting point for the installation of magnet systems. Plastics recycling material from the grinding mill was considered to be the source of contamination. Metal particles had deposited in the plastifying screw and in the

nozzles and were responsible for costly downtimes of the injection moulding machines. In certain cases the metal contaminations even could have damaged the injection moulds or – in the worst case – a metal particle even could have stuck out of a finished plastic article.

#### Solution

S+S Separation and Sorting Technology GmbH of Schönberg in Bavaria has developed a magnet system that can be installed directly on the material inlet of injection moulding machines, beneath the dosing unit. As a "last chance controller" this magnet system allows metal separation to be performed as late as possible in the production process. One important advantage is that for

the installation directly on the processing machine, only one magnet system is needed per machine.

Since the magnet system had to be integrated in an already existing line, the injection moulding company demanded a very flat design. Changing the course of the pipes above the machine would have been very difficult and would have involved immense costs. A space of approximately 80 millimetres was available for installation.

S+S has successfully designed a highly efficient and very flat magnet system measuring only 60 millimetres in height. The compact and sturdy aluminium-block design of the SAFE-MAG allows the installation of conveyor, mixing, and dosing units directly on the inline magnet.





The magnet system had to provide outstanding ease of handling, and quick and efficient cleaning also had to be ensured. For this reason the magnet system features a pull-out at the front. Opening two quick-release fasteners is all that is required for pulling out the aluminium block with the magnet rods for cleaning purposes. Metal contaminations can then be manually removed from the magnet rods.

Following a test phase with ten SAFEMAG magnet systems, which yielded excellent results, the injection moulding company decided to install magnet systems at all the other more than 600 injection moulding machines.

### Characteristics

- Only an extremely flat magnet system could be installed.
- High-performance magnets must separate even very fine ferrous particles.
- The magnet system must be able to bear heavy loads resulting from mixer systems on the inlet side.
- The system design must not allow any depositing of plastics granulate.

### Benefit for the customer

- Guaranteed product quality
- Increased production reliability, optimised and increased machine operating times
- Optimal machine and mould protection
- Reduced number of rejects
- Cost reduction, the system is amortised in a very short time

### Result

"SAFEMAG inline magnets are characterised by their extremely flat and sturdy design, and by their enormous magnetic power. Even finest ferrous contaminations are reliably separated. The system furthermore is very easy to clean. The use of SAFEMAG inline magnets contributes to the guaranteeing of highest quality standards." (Quotation: Stephan Tremel, Product Manager - Magnet Systems, S+S Separation and Sorting Technology GmbH, Schönberg).



For further information on this project please contact:

Stephan Tremel,  
Tel. +49 (0) 8554 308-183

# S+S: Perfect systems for production and recycling

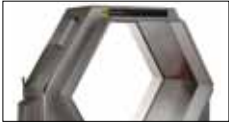
S+S develops, manufactures and sells detectors, separators and sorting systems for applications in industrial production and recycling. S+S systems are used for quality assurance purposes and to increase productivity, for consumer protection, for compliance with industry standards, and for the protection of machines and equipment.

**S+S products – for your requirements and wishes – are available for the most varied product types and conveyor systems:**

## Metal detectors



**Tunnel metal detectors** with rectangular aperture (separable or closed)



**Tunnel metal detectors** with circular or hexagonal aperture



**Single-face metal detectors** for installation in conveyor belts, vibration conveyors and chutes



**Metal detection systems** comprising tunnel metal detector, special conveyor belt, and controller for conveyor belt stop

## Metal separators



**For free-fall applications** - free-fall separators installed in a downpipe, at belt transfer points, or under a cyclone or feed hopper



**For vacuum/pressure conveying applications** - separators for the inspection of bulk materials in pneumatic conveyor pipes



**For pump conveying applications** - separators for installation in pipes, for the inspection of pumped liquid and pasty products



**For bulk material columns** - separators for installation in the feeding area (e.g. on the material inlet of an extruder), for bulk material columns that are slowly moving downwards



**For conveyor belts** - separators installed for the final inspection of packed products, mostly prior to palletising, during weighing, labelling or marking



**For chutes and vibration conveyors** - with this type of material feeding the bulk material flows reach the detection area of the sensors in optimally scattered condition

## X-ray scanner



Apart from detecting various types of contaminations the **RAYCON product inspection system** at the same time detects other product defects or faults. The RAYCON product inspection system features a conveyor belt for bulk material that is matched to your requirements.

## Sorting systems



**Colour separators** with high-resolution CCD camera systems are used to separate mixed-colour material flows into pure-colour material fractions



**Foreign polymer separators** identify different types of plastics and automatically separate foreign plastics from the bulk material flow



**Combined systems** - S+S separation and sorting systems are of a modular design – the optimal components are combined depending on the application



**CSP separators** are laser-based separation systems for the glass recycling industry. They separate transparent materials (glass) from non-transparent materials (ceramics, stones, porcelain)



**Special glass separators** operate on an X-ray transmission basis. They classify and sort different glass types based on their chemical composition



**Sorting systems** that sort mixed conveyed material flows into uniform fractions are available with various metal sensors and a wide range of optical sensors

For detailed information on our products please visit our homepage at: [www.sesotec.com](http://www.sesotec.com)



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**S+S system world**



**Detecting and separating contaminants**

- Removing contaminants:
- metals
  - plastics
  - glass
  - ceramics, porcelain, stones
  - and many others
- Removing from (good material):
- bulk materials
  - liquids and pastes
  - individually packaged product
  - packed and loose items
- Product types
- end-products (food, textiles, plastics etc)
  - industrial raw materials
  - recycled materials

can be integrated into all types of conveyor systems



**Detecting and separating sub-standard products**

- Qualitative defects:
- incorrect colour
  - agglomerations
  - breakages
  - air inclusions in packs
  - incorrect positioning / distribution
- Quantitative defects:
- incorrect weight
  - count errors (incorrect number of items in package)
- Product types
- end-products (food, textiles, plastics etc)
  - industrial raw materials
  - recycling materials

can be integrated into all types of conveyor systems



**Sorting mixed materials into single fractions**

- Types of material:
- glass
  - plastics
  - metals
  - and many others
- Delivery flows:
- bulk materials
  - individually packaged product
- can be integrated into:
- conveying systems
  - bulk material flows

For further information or to discuss your particular application contact one of our specialists.

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