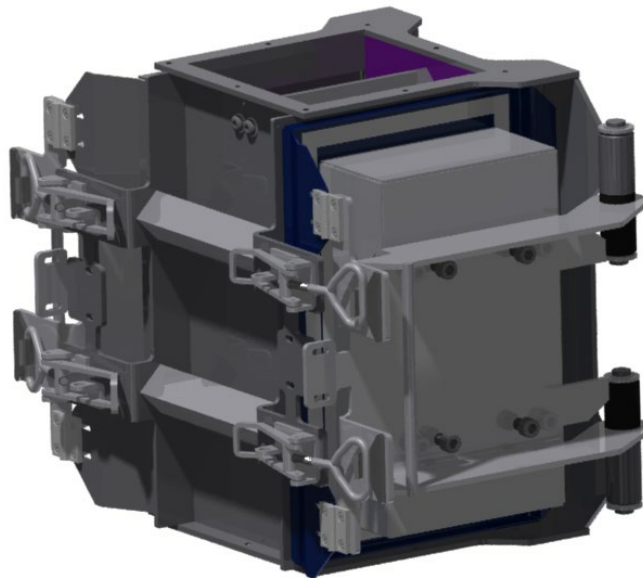


Operating, maintenance and installation manual

External pole magnet, series SBPx, WOD

*Suitable for removal of ferromagnetic parts out of powders and granulates.
Not suitable for extremely bad flowing and or sticky products.*



The description and pictures in this manual may differ from your version

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The information we supply may only be used for service or operation of the product.
It may not be disclosed to any third parties without our prior written permission.

Our products and the data in our documentation may be subject to later amendment without any obligation to previously supplied equipment.

Please ensure that anyone working with the device has access to all the necessary documentation.

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Safety



Dangers of strong magnetic fields

Ferromagnetic objects will be attracted, if they are closer than 1 metre to the magnet. Any ferromagnetic tools or components may be attracted and cause injury or damage the device.



Danger to people fitted with implanted medical devices

People fitted with pacemakers should not enter the magnetic field of the device.



Danger to electronic and mechanical devices

Magnetic information carriers or electronic and mechanical devices, etc, may be destroyed if they enter the magnetic field.



Keep all screens and safeguards in place

Make sure, that all warnings are readable. Replace them in case of damage.



General Protection

Wear all the personal safety equipment necessary for safe operation or maintenance. This may include: overalls, safety glasses, ear protection, helmet, safety shoes, etc.

Identification plate

Identification plate contains following data:

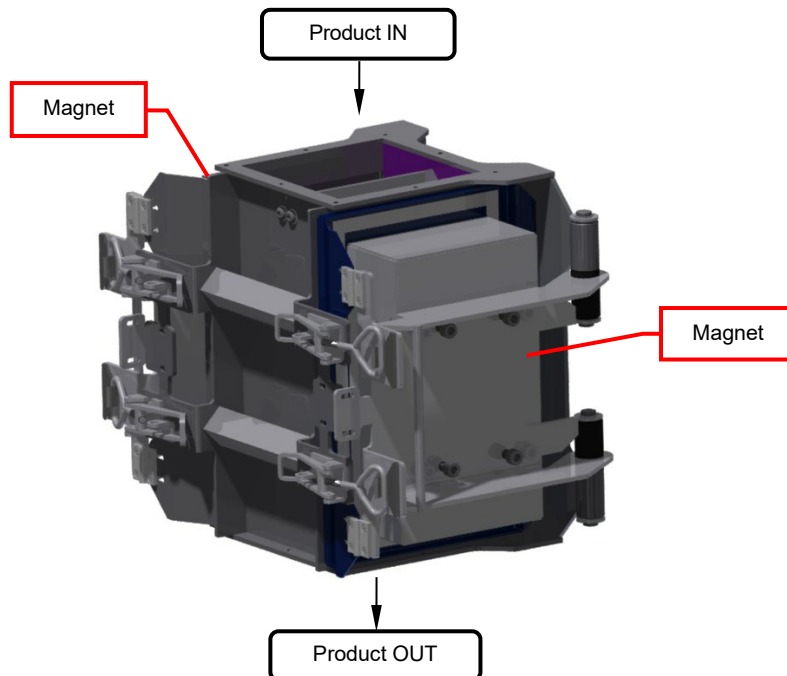
- Name and address of the manufacturer
- Type
- Serial number
- Weight – see the drawing
- Year of manufacture

If you need an information of your device, note the type and serial number and contact us.

Working principle

Description

The plate magnet is an aid for separating **Fe*** (ferromagnetic) particles out of a passing material flow.



- The **product inlet** is bolted to your channel, where the raw product goes inside.
- A **guide strip** under the inlet flange directs the product flow towards the magnets.
- In each of the 2 **doors** of the external pole magnet a **permanent magnet plate** is placed, which creates a double and deep magnetic field. Iron and other ferriferous parts will be separated out of the passing raw product and will cling onto the magnet.
- There is an extractor on the plate magnet, which is used for Fe particles removal.
- A wedge located on the extractor ensures that the separated iron parts are protected from being swept off by passing material.
- The **product outlet** is bolted to your channel where the de-ironed product leaves the external pole magnet for further processing.
- By opening the **door** the operator can clean the magnet of separated iron particles. This can be done by turning the **extractor plate** away from the magnet plate, after having first completely opened the door. See also chapter [Maintenance](#).

Some product that got stuck in-between and under filtered iron parts will fall off with it while cleaning the magnet bars and cause some "product loss".

* Fe parts

Magnetics are formed by the application of an external magnetic field. Temporary magnets lose their magnetism after the external magnetic field is removed. Most alloys of iron, cobalt and nickel are magnetic. However, some stainless-steel alloys like AISI304 or AISI316 are only slightly magnetic. However, AISI403 is ferromagnetic stainless steel.

Device description

Intended use

External pole magnet is aid for separating ferromagnetic (**Fe***) particles out of streaming powder and granular materials up to grain size 10 mm.

Designed for use in material streams like cattle food, plastics, chemical, pharmaceutical, food & pleasure, sand, grinding & cement and ceramic industries, etc.

Not to be used in (moist) sticky and/or badly flowing material streams and for grain size over 10 mm.

Fe particles

Min. Fe-particle size that can be caught: 0,5 mm NdFeB (Neoflux®) magnet
 1,0 mm Ferrite magnet

Depends on used magnet type, *see device specification*

Temperatures

Ambient temperature: -20 °C ... +60 °C.

Product temperature: +80 °C NdFeB (Neoflux®) magnet
 +100 °C Ferrite magnet

Valid for standard design. Always refer to identification label.

Magnet must be protected against temperatures out of this range, otherwise magnet might **loose magnetic force permanently**.

Air pressure in the product channel

Max. overpressure inside the product channel: 0.2 bar.

Max. under pressure inside the product channel: 0.5 bar.

Free space

Make sure that there is approximately 0.5 meter of free space around the magnet to perform and ease the inspection and maintenance operation.

Noise level

Vibrations

The magnet has to be protected against strong external vibrations, otherwise is there a risk of loose the captured Fe particles or device damage.

Cleaning

Minimum 2x per day cleaning (Fe disposal) of the device. Clean magnets have the best separating result.

According to your experience dispose the Fe particles more often, or less often in case of satisfactory result.

See also chapter [Maintenance](#)

ATEX

There are mentioned exact defined conditions in document „Statement of exclusion“. The magnet can be used in potentially explosive atmospheres under these conditions.

Deliverable specials**Product temperature above +100 °C**

Different magnetic material can be used for higher temperatures.

Abrasive products

If you have an abrasive product, we can supply the device with a protective coating, like for instance a wolfram carbide coating.

Use in FOOD product flows

It is also possible to use the magnet in food industry. Standard design is with small gaps, surfaces with contact with product are made of stainless steel. It is possible on request to deliver gap-free design, made of stainless steel AISI304(L) or AISI316(L), or in combination with other – for instance prescribed or delivered by customer – food improved materials. Surface treatments like electrolytic polishing, staining, etc. are naturally possible.

Operation and maintenance

Checks before and during startup

Before startup, make sure that:

- the device / the installation has no damages or malfunctions;
- all connections (mechanical, electrical) have been made properly;
- There are no foreign objects inside the device.
- Doors are closed and secured by clamps

The operator ensures regular removing of caught Fe parts. It is necessary to inform operators of danger of strong magnetic field. It is necessary to follow correct work procedure.



Stop the material flow first.

**Magnetic field is permanent.
It is active also during cleaning and maintenance!**

Iron removal

It is advised **minimum 2x per day** cleaning (iron disposal) for an optimal magnetic separation and to prevent iron accumulation on the magnets and the problems that can be caused by that clean magnets have the best separation result.

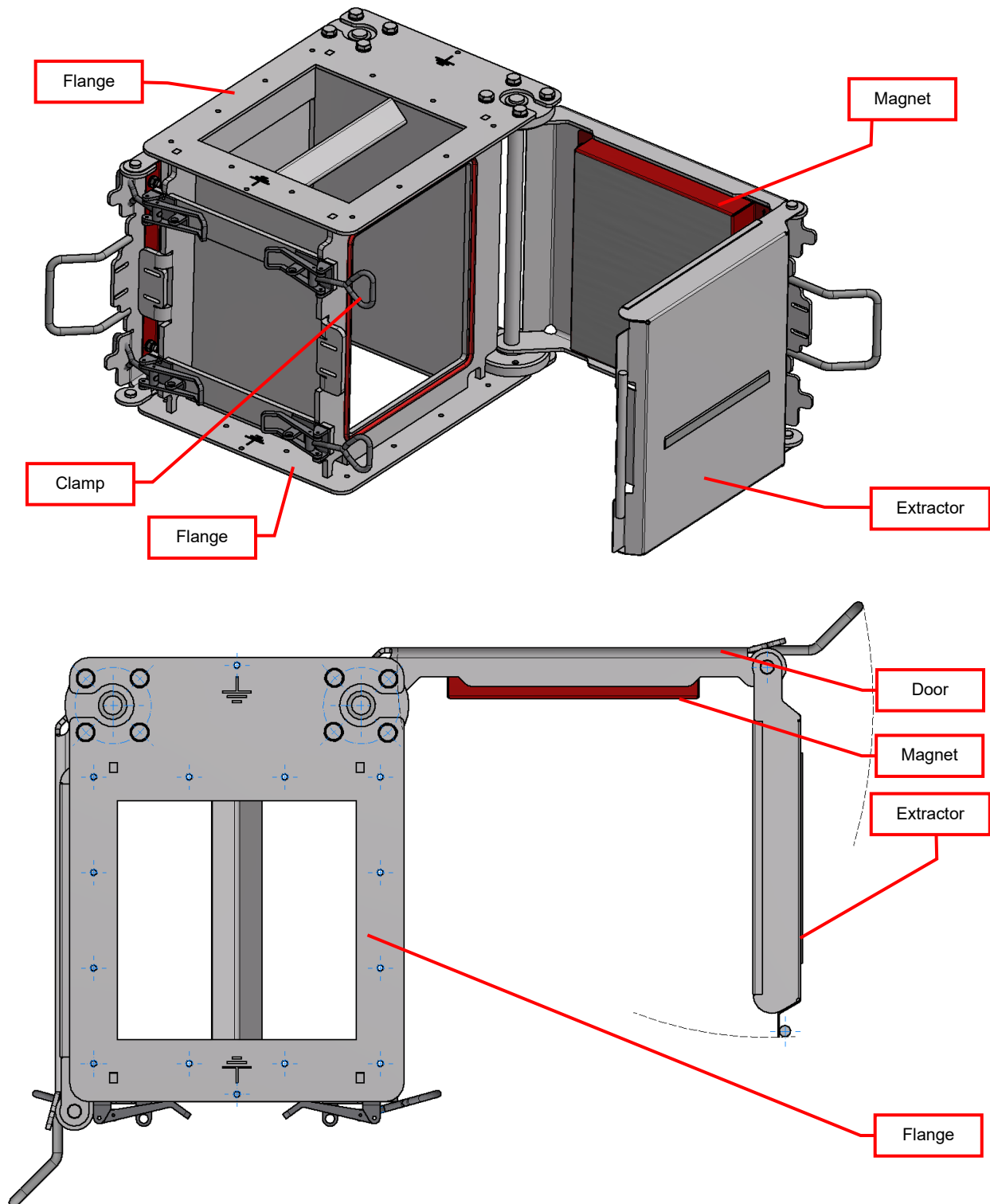
According to your experience dispose the Fe particles more often, or less often in case of satisfactory result.

Pay attention to personal dangers / wear protective clothing, glasses, shoes and hand gloves:



Cleaning procedure:

1. Stop the product flow.
2. Loosen fastening clamps.
3. Turn the door with the magnet as far away as possible.
4. Turn extractor plates as far away as possible from magnets.
The caught iron will now fall off.
5. Sweep with a brush of soft cloth and or blow clean the extractor plates and the magnet if necessary.
6. Turn back the extractor, close the door and fasten them by clamps.
7. (Re-)Start the product flow.



Regular inspection and maintenance



Inspect regularly whether warning pictograms and identification plate are still present and readable. If are warning pictograms lost or damaged, replace them immediately. Contact us in case of damage or lost the identification plate.

Inspect regularly the magnet, gasket, extractor and filter body on faults and wear.

Inspect regularly the flange connection to your chute, if is sealed and flanges are aligned.

Inspect regularly the structure on which is the magnet hanged up / mounted.

Normal maintenance activities

- Regularly remove a layer of dust from the device surface.
- Occasionally grease door hinges to reduce their wear. In food industry: use a grease approved for food industry.

Malfunctions/service

Malfunction	Possible cause	Possible Remedy
Magnet does not separate ferromagnetic (Fe) particles out of the product stream, or separates them badly	Magnet unit is full of dirt and or saturated with Fe particles	Clean the magnet unit. Actuate Fe disposal procedure more often when necessary.
	Not separated particles are not (enough) ferromagnetic.	Check if particles to be separated are ferromagnetic, using a small permanent magnet.
	Ferrous parts within the range of the magnets reduce the magnetic field.	1. Check the range of the magnets using a small piece of iron. 2. Clean the plate magnet in the door.
	Overflow of product volume.	Do not exceed the flow rate capacity stated in the specification.

Customer service

Please have the following information available if you require customer service assistance:

- Identification plate (complete)
- Type and extent of the problem
- Time the problem occurred and any accompanying circumstances
- Assumed cause

Spare parts

is necessary to replace a part, you can order the part according to the type, serial number (see the identification plate) or according to the part number from the spare parts drawing.

Installation



All the works must be performed by qualified persons according to valid safety rules.

- It is necessary to take into account weight of the device including load of product flow and caught iron. Inlet and outlet piping must be strong enough to carry this load.
- Make your construction stronger if it is too weak.
- Use only lifting/hoisting and transport equipment that is in good condition and never exceed the safe working load of the equipment being used.
- Work safely, ensure sufficient working space and use stable and reliable scaffolding, ladders and other auxiliary equipment to ensure that the device can be installed without risk.
- All auxiliary equipment used for transport purposes, must be dismantled and removed before putting the device into operation.
- The device must always be lifted on at least 2 lifting lugs!
- Lock the door and secure them against opening, it avoids moving of the centre of gravity during lifting.
- Observe the correct order of tightening the flange bolts, wrong order can cause a leakage. Do not lose the transport belt or chain during placing, the device can overturn and fall down.
- When installing the device, ensure that the free-fall height of your product is a maximum of 0.4 metres. A higher free-fall height will increase the speed of the product, resulting in poorer separation.



The weight is indicated on the identification plate of the device.

Closure material / grounding

The unit must be connected to an equipotential bonding system.

Make sure that all closure and or packing material between the magnet device and your product channel has a surface resistance of less than 1 GΩ.

Parts used

The device (depending to specific design) can include door switches. The manufacturer and type of the used switches can be found on the identification plates or on spare parts / customer drawing. If necessary, you can find the user manual and the declaration of conformity of the used switches on the manufacturer's website. We can also send you these documents on request.

Long term storage

When storing, place the magnet on a dry, safe place.

Storage and dismantling

When recycling the device at the end of its technical life, dispose of correctly and according to local regulations. Always be aware of the magnetism.