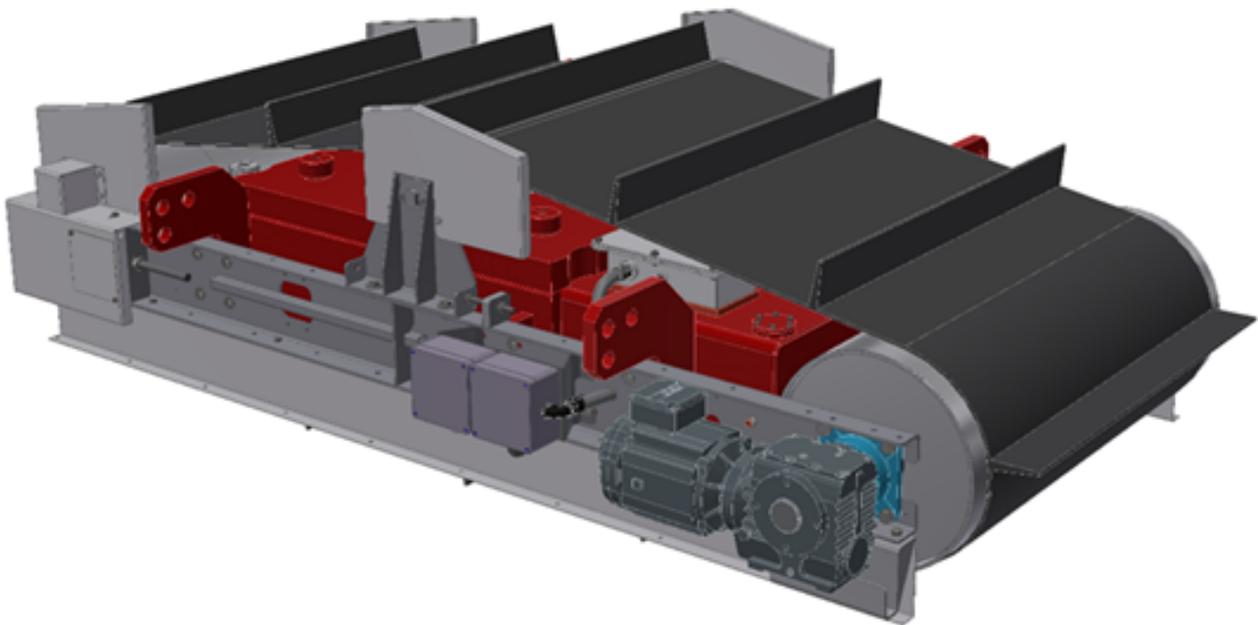


# Installation and user manual

Electro overband magnets, type ROEx, SxEB



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## 1 Introduction

This manual contains information about correct use and maintenance of the machine. The manual contains instructions that should be followed to prevent injury and serious damage and to ensure safe and problem-free operation of the machine. Read this manual thoroughly and ensure that you fully understand everything before using the machine.

If you need more information or still have questions, please contact the manufacturer. The contact details are provided on the title page of this document.

Additional copies of the manual can be ordered by providing the machine description and/or the article number and the order number. The descriptions and illustrations in this manual, provided for clarification, may differ from the descriptions and illustrations of your model.



### NOTICE

- ▶ This manual and the manufacturer's declaration(s) are to be considered part of the machine.
- ▶ The manual and declarations must remain with this machine when it is sold.
- ▶ The manual must be available to all operating personnel, service technicians and others who work with the machine throughout the entire service life of the machine.

## 2 Safety

The instructions in this manual must be complied with. Failure to follow these instructions may result in material damage, personal injury or even death.

### 2.1 Owner's responsibilities

The machine is used in an industrial environment. The owner is therefore subject to legal obligations on occupational safety.

In addition to the safety instructions in this manual, you must comply with safety, accident prevention and environmental protection regulations. Specifically:

- The owner must familiarize themselves with the applicable industrial safety regulations and identify the additional hazards arising from the particular working conditions on the factory premises in a risk assessment. They must apply these findings to formulate work instructions for the operation of the machine.
- The owner must regularly check that the instructions they have drawn comply with the applicable regulations and standards and adjust them as necessary throughout the entire service life of the machine.
- The owner must clearly define and assign the responsibilities for installation, operation, maintenance and cleaning.
- The owner must ensure that all personnel who work with the machine have read and understood the user manual. They must also train and instruct personnel regularly with regard to the hazards.

The owner must provide the required personal protection. The owner is also responsible for ensuring that the machine is in technically perfect condition at all times:

- The owner must ensure that the maintenance intervals specified in this manual are observed.
- The owner must have all safety devices checked regularly for proper operation and completeness.

### 2.2 Requirements for the personnel – Qualifications



#### WARNING

##### Injury risk due to insufficient qualification.

Improper handling can result in serious injury and damage to the equipment.

- ▶ Have all work on the machine carried out by qualified personnel only.

This manual establishes the following qualifications for the various work responsibilities:

Only people who can be expected to work reliably may be employed. The work may not be assigned to people with impaired responsiveness, e.g. due to narcotics, alcohol or drugs.

- When selecting personnel, observe locally applicable regulations regarding age and position.
- **Instructed person** has been instructed by the owner on the tasks assigned to them and dangers that may result from injudicious behaviour.
- **Specialized personnel** are able to perform their assigned tasks while recognizing and avoiding potential hazards based on their training, knowledge, experience and familiarity with generally applicable regulations.
- Based on their training, knowledge, experience and familiarity with generally applicable standards and regulations, the **qualified electrician** is able to carry out work on electrical installations, recognizing and avoiding potential hazards. The qualified electrician has undergone training for the place of work and is familiar with the applicable standards and regulations.

## 2.2.1 Unauthorized personnel



### WARNING

#### Danger to unauthorized personnel

Unauthorized personnel who do not meet the requirements listed here are not familiar with the hazards associated with the work area.

- ▶ Keep unauthorized personnel away from the work area.
- ▶ If in doubt, approach individuals and escort them out of the work area.
- ▶ Stop the work activities as long as unauthorized personnel are in the work area.

## 2.2.2 Instruction

The owner must provide instruction to personnel at regular intervals. In the interest of traceability, records of the instruction sessions must be kept.

## 2.3 Intended use

The machine is designed and built exclusively for the intended use described here.

The machine is intended for sorting bulk goods only. For the properties of the bulk goods, see the order confirmation.



### WARNING

#### Beware of unintended use.

Hazardous situations may arise if the machine is not used as intended or is used for other purposes.

- ▶ Use the machine only as intended.
- ▶ Strictly follow all information in this manual.
- ▶ Do not exceed the maximum specified speed of the pole system.
- ▶ In particular, do NOT use the machine for the following non-intended purposes:
  - transporting people
  - walking on the conveyor belt
  - storing material
  - installation at an incline outside the permitted angle range
  - feeding highly flammable substances

Claims for damages of any kind resulting from unintended use are excluded.

The owner bears sole liability for any and all damage resulting from unintended use.

## 2.4 Personal protection

To minimize health hazards, the use of personal protection is mandatory.

- Ensure that you always wear the protective equipment required for the task at hand.
- Observe personal protection instructions posted in the work area.

### 2.4.1 Protective measures

- Always wear protective clothing, safety shoes, hearing protection, respiratory protection, safety glasses and protective gloves.

### Clothing for specific tasks

Certain activities require special protective equipment. The individual chapters of this manual specify the use of such equipment. Such special protective equipment is explained below:

**Safety helmet** – protects against falling and projected objects and material.

**Safety harness** – protects against falls where there is an increased risk of falling.

Such a risk is found where certain height differences are exceeded or when the workplace is not protected with a railing. Wear the safety harness with the safety rope connected between the safety harness and a fixed attachment point; use a fall arrestor if necessary. Safety harnesses may only be worn by specially trained people.

## 2.5 Special hazards

The following section describes residual risks identified on the basis of a risk assessment.

Observe the safety instructions given here and the warnings in the following chapters of this manual to reduce health risks and prevent dangerous situations.



### DANGER

#### Life-threatening danger from magnetic radiation

For people with implanted pacemakers and metal implants, there is a risk of serious physical injury or even death in a radiation zone.

- ▶ Ensure that no one with an implanted pacemaker or metallic implant enters the direct and indirect danger zone. In terms of exposure to magnetic fields, the safe distances from machine parts are further specified in this manual.



### DANGER

#### Life-threatening danger from electric current

Contact with live wires poses an immediate life-threatening danger. Damage to the insulation or individual components can be life-threatening.

- ▶ If insulation damage is found, disconnect the power supply and have the insulation repaired immediately.
- ▶ Only allow work on the electrical system to be carried out by trained electricians.
- ▶ Disconnect the electrical system and check that no voltage is present before carrying out any work.
- ▶ Switch off the power supply and secure it against being switched on again before carrying out maintenance, cleaning or repair work.
- ▶ Do not bypass or disable fuses. Pay attention to the correct rating when replacing fuses.
- ▶ Keep moisture away from live parts as it may cause short circuits.



### WARNING

#### Fire hazard due to highly flammable substances

Highly flammable substances, liquids or gases can catch fire and cause serious injury or even death.

- ▶ Do not smoke in the danger zone or the surrounding area. Do not use open flame or ignition sources.
- ▶ Keep fire extinguishers close at hand.
- ▶ Report any suspicious substances, liquids or gases to the supervisor immediately.
- ▶ Immediately interrupt work in case of fire. Leave the danger zone until everything is safe.



**WARNING**  
**Dust explosion hazard**

- Dust deposits that are disturbed can form an explosive mixture with the surrounding air.
- ▶ Smoking and handling open flame and/or ignition sources of any kind are strictly prohibited in the vicinity of the machine and in the building.
  - ▶ Keep the hazard zone dust-free.
  - ▶ Interrupt work immediately if excessive dust formation occurs. Wait for the dust to settle and then remove the dust layer.

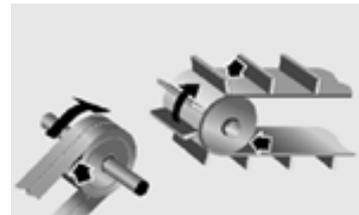


**WARNING**  
**Health risk due to dust**

- In the long term, inhaled dust can lead to lung damage and other health problems.
- ▶ Always wear respiratory protection while working.



**WARNING**



**Danger of being pulled into the machine**  
**Risk of injury from moving parts.**

- ▶ Do not place hands (or parts of your clothing, etc.) in the space between covers and the conveyor belt!
- ▶ Do not handle or reach into moving parts during operation.
- ▶ Do not open any covers during operation.
- ▶ Sharp edges and pointed corners may cause abrasions and cuts to the skin.
- ▶ Wear close-fitting protective clothing in the danger zone.



**WARNING**  
**Hearing loss due to noise**

- The noise level in the working environment may cause severe hearing loss.
- ▶ Always wear hearing protection while working.
  - ▶ Keep time spent in the hazard zone to a minimum.



**WARNING**  
**Risk of injury from falling material**

- Material falling down or ejected during operation can cause serious injury.
- ▶ Do not enter danger zones while the machine is in operation.
  - ▶ Only enter the danger zone (e.g. during adjustment) while wearing a safety helmet, safety shoes and protective clothing.



### WARNING

#### Danger of tripping due to litter and scattered objects

Litter and scattered objects are a slipping and tripping hazard and can cause serious injury.

- ▶ Always keep the work area tidy.
- ▶ Remove items that are no longer needed.
- ▶ Mark obstacles with yellow/black marking tape or red/white barrier tape.



### NOTICE

#### Risk of injury from edges and corners

Litter and scattered objects are a slipping and tripping hazard and can cause serious injury.

- ▶ Take particular care when carrying out work near sharp edges and pointed corners.
- ▶ Wear protective gloves if in doubt.



### NOTICE

#### Risk of burns from hot surfaces

Contact with hot parts may cause burns.

- ▶ Always wear protective work clothing and safety gloves when carrying out work near hot components.
- ▶ Ensure that all components have cooled down to ambient temperature before carrying out any work.



### NOTICE

#### Risk of injury to limbs from built-in rollers

Injury to body parts when removing stuck objects.

- ▶ Switch off the machine/installation.
- ▶ Ensure the guards around the roller are removed before removing stuck objects.



## 2.6 Safety devices and warning pictograms on and around the machine

Where necessary, warning pictograms have been affixed to the machine.



### NOTICE

#### Know your pictograms

- ▶ Read the warnings and instructions on the machine's pictograms carefully.
- ▶ Regularly check that the pictograms on the machine are still present, intact and clearly legible.
- ▶ Keep the pictograms clean.
- ▶ Replace any missing or illegible pictograms with new ones and ensure they are placed in the same location.

## 2.7 Damage caused by magnetic field

The magnets generate a powerful magnetic field that attracts ferromagnetic parts. This also applies to ferrous materials you may carry with you, such as house keys, money and tools. Use only non-ferromagnetic tools and workbenches with a wooden worktop and a non-ferromagnetic base within the magnetic range.



### **WARNING**

#### **Strong magnetic field**

There is a risk of personal injury when working on or checking the magnetic components. Ensure that fingers do not get caught between the components.

## 2.8 Lock Out – Tag Out (LOTO)

Lock Out – Tag Out (LOTO) is a safety procedure used to ensure that hazardous equipment is properly shut down and cannot be restarted until maintenance or repair work has been completed. The use of LOTO is intended to protect people from the unexpected release of energy and the dangers of operating machinery. The isolated power sources are then locked, and a tag is attached to the lock identifying the employee and stating the reason why the LOTO has been applied. This prevents equipment from being accidentally started while it is in a hazardous condition or while an employee is in direct contact with it.

The employee then has the key to the padlock, so only they can remove the lock and start the equipment. This prevents equipment from being accidentally started while it is in a hazardous condition or while an employee is in direct contact with it.

## 2.9 Other remarks/warnings

Rectify faults before using the machine. If the machine is used while the fault is present, after having completed a risk assessment, inform operating and maintenance personnel of the fault and the potential risks associated with it.

## 3 Product standards and directives

### 3.1 Limit values for occupational and public exposure to electromagnetic and permanent magnetic fields

In accordance with the 2013/35/EU, the limit values for magnetic fields are defined as follows:

*Directive 2013/35/EU of the European Parliament and of the Council of 26 June 2013 on the minimum health and safety requirements regarding the exposure of workers to the risks arising from electromagnetic fields.*

Observe the following measures regarding exposure to magnetic fields in accordance with EN12198-1 (machine category = 0, no restrictions) of the machine:



#### Life-threatening danger to people with implanted medical devices

People with an active implanted medical aid (e.g. pacemaker, defibrillator, insulin pump) must not be present within a radius of **6 metre(s)** of the magnetic separator.



#### Damage to magnetically sensitive objects

Objects containing ferromagnetic components, such as bank cards, credit cards or chip cards, keys and watches, may be irreparably damaged if they come within a radius of **3 metre(s)** of the magnetic separator.



Be aware that ferromagnetic components are attracted – even if you are carrying them – when you are within **1 metre(s)** of the magnetic separator.

Pregnant personnel and the general public must not come within a radius of **1 metre(s)** of the magnetic separator.

### 3.2 Hazardous liquid



The overband magnet is filled with transformer oil, which is classified as hazardous under European regulation (EU) no. 1272/2008 (CLP):

- ▶ Aspiration hazard, Category 1 (H304).
- ▶ Hazardous to the aquatic environment – chronic, Category 3 (H412).
- ▶ Hazardous substances: Distillates (petroleum), heavy, hydrocracked.

Standard hazard statements:

- ▶ H304 May be fatal if swallowed and enters airways.
- ▶ H412 Harmful to aquatic life with long lasting effects.

Safe handling instructions:

- ▶ P273 Avoid release to the environment.
- ▶ P102 Keep out of reach of children.
- ▶ P301+P310 IF SWALLOWED: Immediately call a POISON CENTRE/doctor.

## 4 General

### 4.1 Scope of delivery

- Check the shipment immediately upon delivery for:
  - Possible damage and/or shortcomings as a consequence of transport. In the event of damage, ask the carrier to complete a damage report.
  - Completeness of the scope of delivery.



#### NOTICE

In the event of damage or incorrect delivery, contact the manufacturer immediately. The contact details are given on the title page of this manual.

### 4.2 Identification plate

There is an identification plate on the machine, as shown below. The identification data are very important for maintenance and service of the machine.

- Always keep the identification plate clean and legible.



#### NOTICE

Always state the serial number when ordering spare parts, requesting service or reporting a malfunction.

	<b>GOUDSMIT</b> MAGNETICS		<b>UK</b> <b>CA</b>	<b>CE</b>	
Type:	<input type="text"/>	Coil power cold/hot:	<input type="text"/> / kW	<input type="text"/> IP55	
Ser. Nr.:	<input type="text"/>	Weight:	<input type="text"/> kg	Voltage:	<input type="text"/> 230/400 V
Year:	<input type="text"/> 2025	Max. product temperature:	<input type="text"/> 40 °C	Drive:	<input type="text"/> kW
		<input type="text"/> T <sub>a</sub> = -20...+40 °C			
www.goudsmitmagnetics.com			Waalre, the Netherlands		

**5 Operating principle**

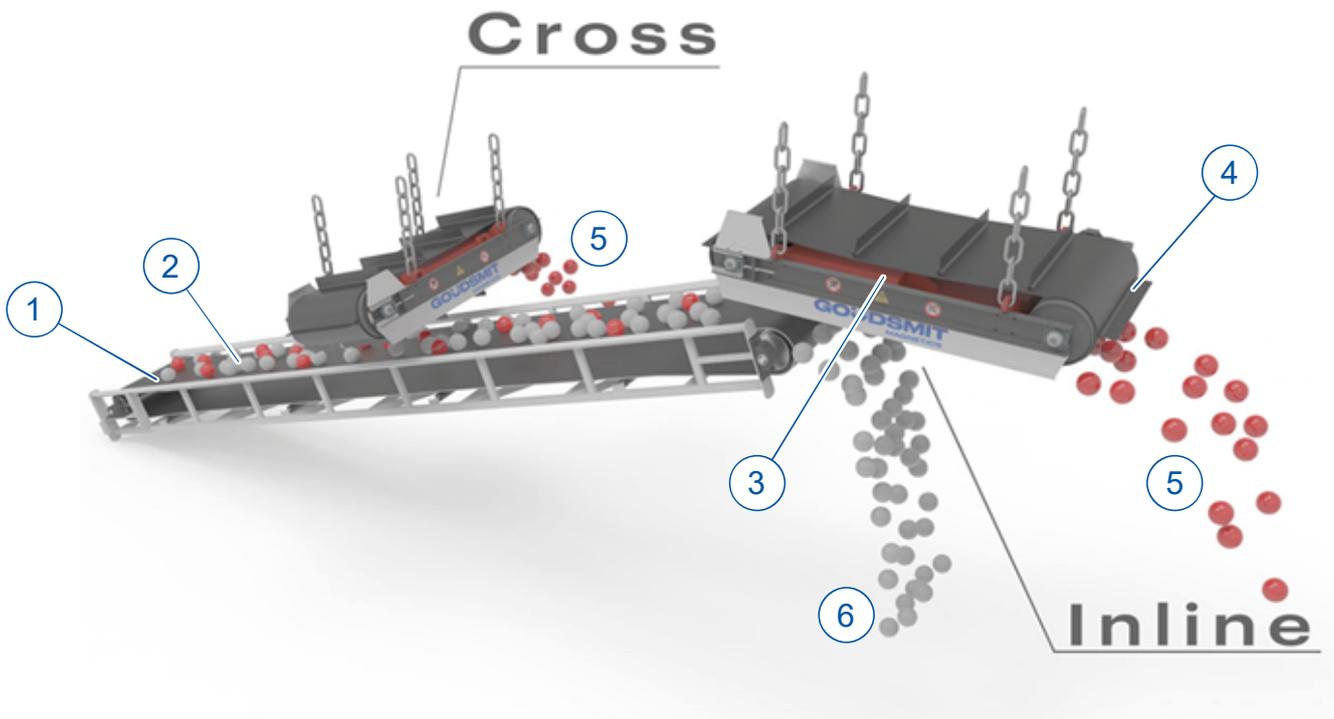


Figure: Operating principle of the electro overband magnet

[1] Conveyor belt	[3] Magnet	[5] Fe parts
[2] Product with Fe parts	[4] Rubber belt with cleats	[6] Product

- The product (with Fe parts\*) on the conveyor passes beneath the **magnet** suspended above it. The Fe parts are **attracted** by the magnet.
- The Fe parts **stick to** the **rubber belt** and are then carried out of the magnetic field by the **cleats** .
- Finally, the separated Fe parts fall down under their own weight and can then be collected or discharged.

*\* Fe parts*

Magnetic parts are formed by the application of an external magnetic field. Temporary magnets lose their magnetism once the external magnetic field has been removed. Most alloys of iron, cobalt and nickel are magnetic. However, some stainless steel alloys, such as AISI304 or AISI316, are only slightly magnetic.

Since in most cases it is iron parts that are affected by ferromagnetism, this manual uses the term 'Fe' when referring to ferromagnetic material.

**6 Construction**

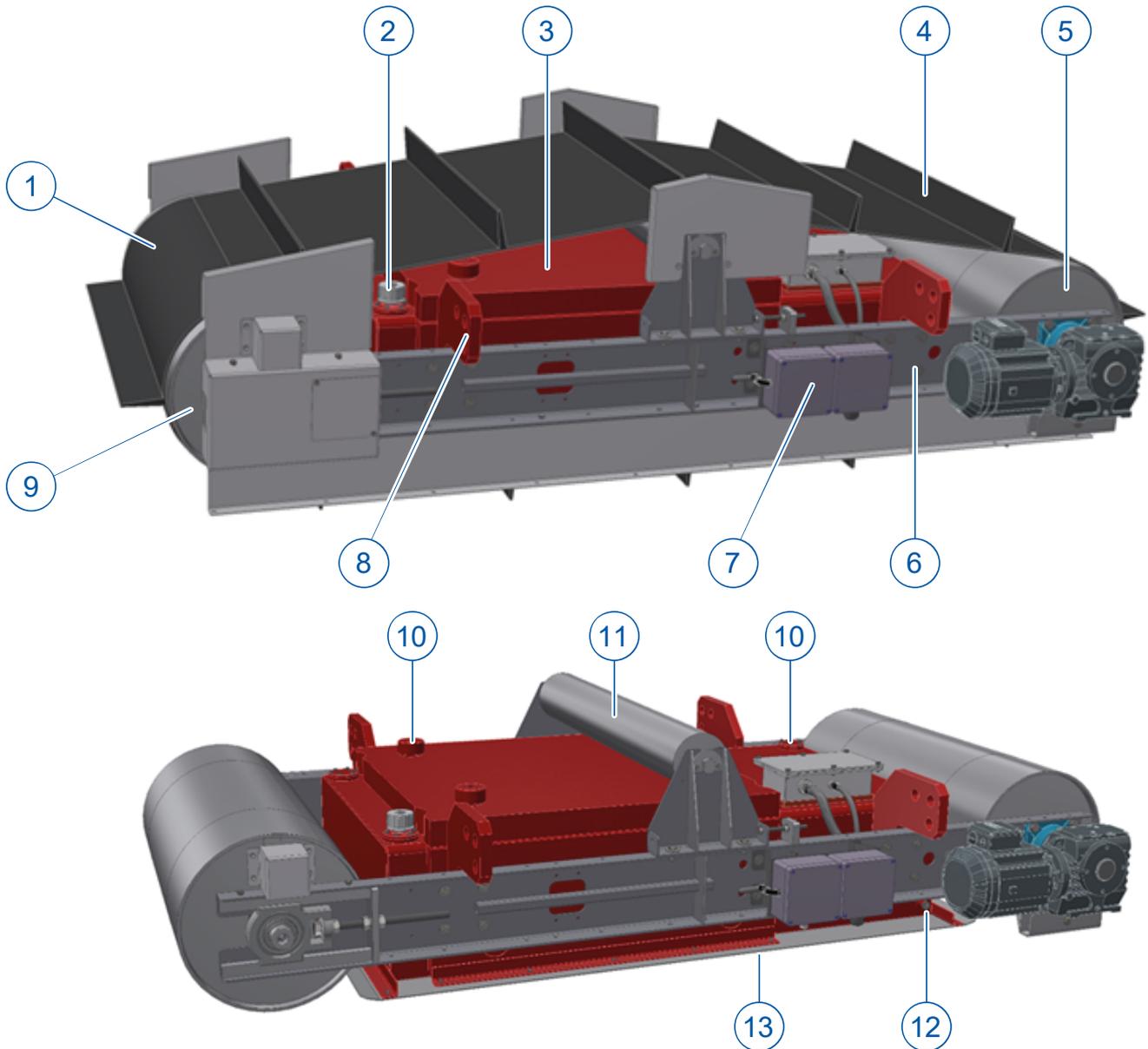


Figure: Construction of a standard electro overband magnet

- |                              |                                  |  |
|------------------------------|----------------------------------|--|
| [1] Rubber belt              | [6] Support beam                 | [11] Top roller                          |
| [2] Oil filler cap with vent | [7] Junction boxes               | [12] Drain plug                          |
| [3] Magnet                   | [8] Lifting eye/attachment point | [13] Stainless steel wear plate (bolted) |
| [4] Cleat                    | [9] Tensioner roller             |  |
| [5] Drive roller             | [10] Cap for external cooling    |  |

The **electromagnet** is a coil in a housing.

The **magnet housing** is filled with transformer oil for cooling and protection.

Beneath the magnet is a replaceable **stainless steel wear plate**. The plate protects the magnet from damage. The overband magnet has a roller construction around which a **rubber belt with cleats** runs. The **drive roller** and the **tension roller** are curved to provide a guiding effect on the conveyor belt. The belt can be tensioned by adjusting the two tension bearings.

One or two **top rollers** guide the rubber belt over the coil housing. They can help align the belt horizontally if necessary.

Around the rollers is a **rubber belt with cleats**. The cleats serve to push the separated Fe pieces out of the magnetic field so they can be more easily removed.

The frame has four to six **attachment points (lifting eyes)** for hoisting and suspending the electro overband magnet.

The **junction boxes** are used to connect the high-power DC supply (one box) and the sensors (the other box).

## 7 Product information

### 7.1 Intended use

The permanent overband magnet is suitable for removing or separating large quantities of Fe parts from, for example, construction and demolition waste, waste paper, electric cables, car tyres, glass, wood, plastics, paint cans and for cleaning slag from incinerators.

### 7.2 Fe parts

The overband magnet is designed to capture most accessible iron (ferromagnetic) parts. Fe parts with a compact shape (e.g. cube or ball) are more difficult to separate than parts with an elongated or flat shape (e.g. rod, nail or sheet).

#### 7.2.1 Temperatures

Suitable for ambient and product temperatures from -20 to +40 °C.

The magnet must be protected against temperatures outside this range. Exceeding these temperatures may reduce performance or **cause irreparable damage to the electromagnet or bearings**.

#### 7.2.2 Clearance

The clearance around the overband magnet must be about 1.5 metres for good cooling. On one side, a clearance of at least 1.5 times the belt width must be provided for belt replacement (the overband magnet must be moved to a suitable floor for replacing the belt).

#### 7.2.3 Noise level

The sound pressure level  $L_p(A)$ , measured at a distance of 1 metre from the overband magnet without capturing Fe pieces and with the cooler running, is less than 70 dB(A). If the  $L_p(A)$  level increases during operation, the overband magnet must be checked immediately for defects.

The noise level may increase during operation due to the captured pieces. The customer must ensure suitable protection for the operator.

#### 7.2.4 Vibrations

The vibrations caused by the magnet must be damped by the equipment from which the overband magnet is suspended. Make the structure strong enough. Also ensure that the magnet is not exposed to external vibrations, as these may adversely affect the magnetic force (captured parts may fall off).

## 8 Transport and installation

### 8.1 Transport



#### WARNING

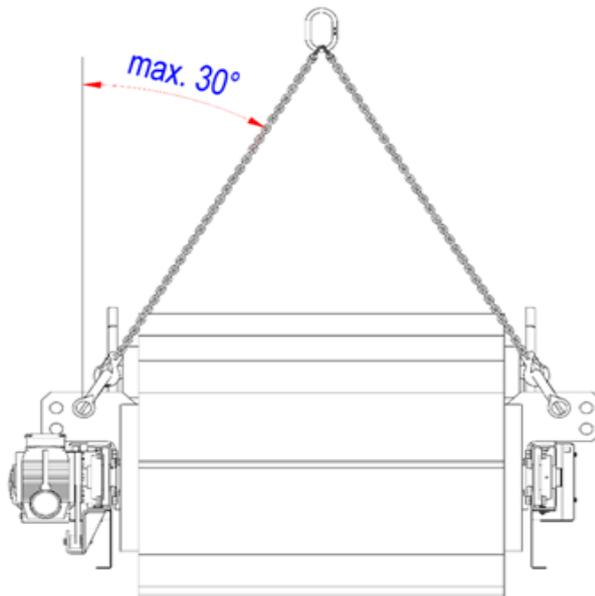
- ▶ The machine permanently emits a magnetic force. See the 'Safety' chapter for the precautions to be taken during transport.
- ▶ Keep in mind the centre of gravity. The centre of gravity lies slightly off-centre towards the drive and the main pole of the magnet.
- ▶ Do not use ferromagnetic materials for the rollers or structural parts of your construction/installation within the machine's magnetic field. These parts may become magnetized and the separation result will be adversely affected.

- Use a suitable lifting/hoisting system that supports the weight of the machine. The weight of the machine is shown on the identification plate.
- Ensure there is enough free space around the machine and construction for transport and installation.
- Avoid shocks during transport to prevent damage.



#### CAUTION

##### Risk of damage



Always lift and move as vertically as possible using the lifting eyes. The chains must not damage the overband magnet (e.g. the covers). Always use four chains. It is recommended to use the inner holes of the lifting eyes, as shown in the figure above. The outer holes are intended for final suspension in the installation.

## 8.2 Installation and assembly



### WARNING

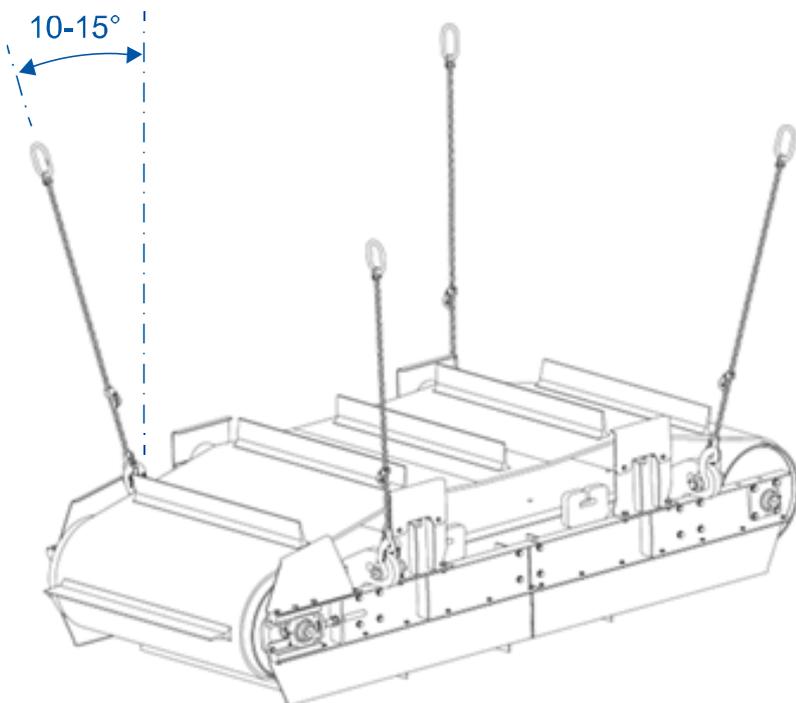
#### Requirements for installation and assembly

Installation of the machine requires specialists with sufficient experience. Incorrect installation may lead to life-threatening situations or considerable material damage.

Take the following precautions:

- ▶ Allow only qualified personnel to install the machine and connect it, both electrically and otherwise.
- ▶ The suspension/base must be strong enough to support the weight of the machine and the product to be processed.

All auxiliary equipment used for transport purposes must be disconnected and removed before the machine is put into operation.



The machine is preferably suspended with chains, as chains damp vibrations better than a rigid structure.

The chain angle relative to the vertical should be 10–15° outward (see drawing above).

- Check the load capacity of the chains used and the supporting structure. The load consists of the weight of the machine and other forces caused by operation and attracted material.
- Check that the load is distributed over all four chains.

## 8.3 Installation requirements

### 8.3.1 General requirements

Do not use iron materials for rollers and/or structural parts within the magnetic field of the magnet. These parts will become magnetized, negatively affecting the Fe separation result. This also applies to structures intended for discharging separated pieces. **Use stainless steel, for example.**

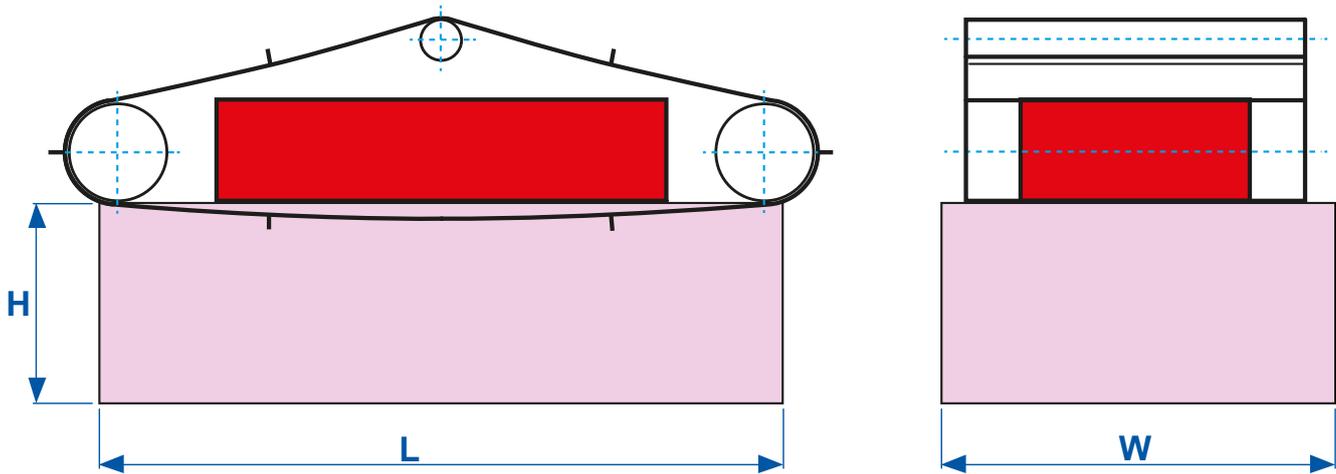


Figure: Area with strong magnetic field effect

L – roller pitch

W – width of rubber belt

Standard type	Product key	Magnet dimensions	H [mm]	W [mm]	L [mm]
ZIEB080022	ROE-04-C-080-W-...	1249x760x410	640	1200	1800
ZIEB100022	ROE-05-C-100-W-...	1555x950x437	720	1500	2200
ZIEB120022	ROE-07-C-120-W-...	1870x1060x470	900	1700	2600
ZIEB140022	ROE-08-C-140-W-...	2200x1330x490	1040	2100	3100
ZIEB160022	ROE-09-C-160-W-...	2488x1520x583	1200	2500	3500
SWEB100022	ROE-06-C-100-M-...	1000x1000x501	720	1600	1600
SWEB120022	ROE-07-C-120-M-...	1200x1200x550	900	1900	1900
SWEB140022	ROE-08-C-140-M-...	1400x1400x600	1040	2300	2300
SWEB160022	ROE-09-C-160-M-...	1600x1600x700	1200	2600	2600
SWEB180022	ROE-10-C-180-M-...	1800x1800x820	1400	2900	2900

It is strongly recommended to use non-magnetic material in the area with a strong magnetic field. Ferrous materials can affect the separation process. Iron material also attracts iron dust and iron particles.

It is not advisable to install electrical and especially electronic equipment near the magnetic field. Such equipment may be affected or severely damaged.

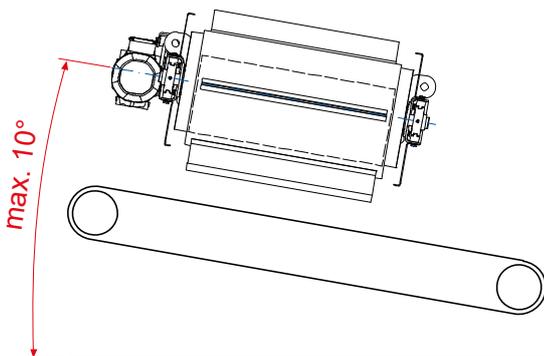
### 8.3.2 Transverse installation over a conveyor



In practice, transverse installation is the most common, as it is easier to fit into an existing production line. An additional advantage is that the separated parts are discharged to the side, which is easier to handle from a logistical point of view.

For the best separation result, install the overband magnet as close as possible to the conveyor.

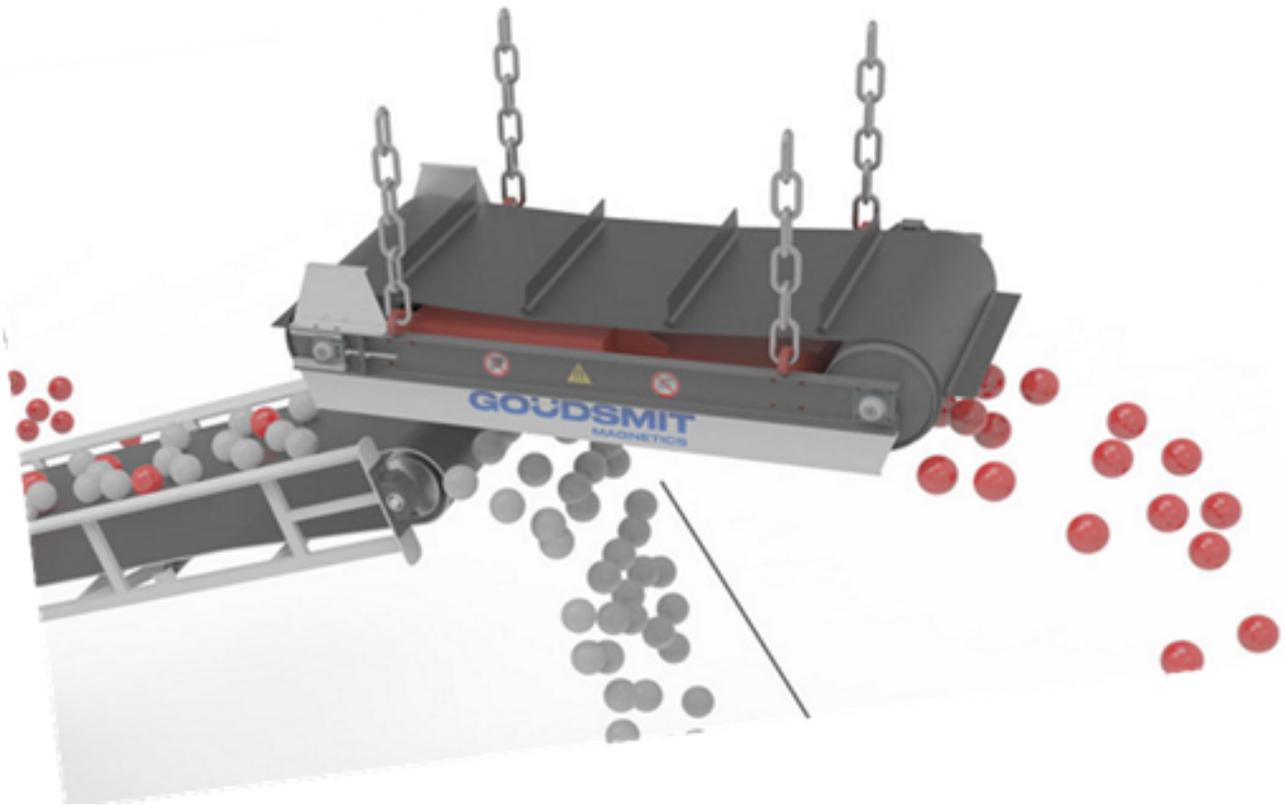
### 8.3.3 Transverse installation over an inclined conveyor



The inclination angle of the standard overband magnet is limited to 10°. The motor must be at the top. If the overband magnet needs to be installed at a greater inclination angle, specify this when ordering. Otherwise, contact us.

Figure: Overband magnet with motor at the top

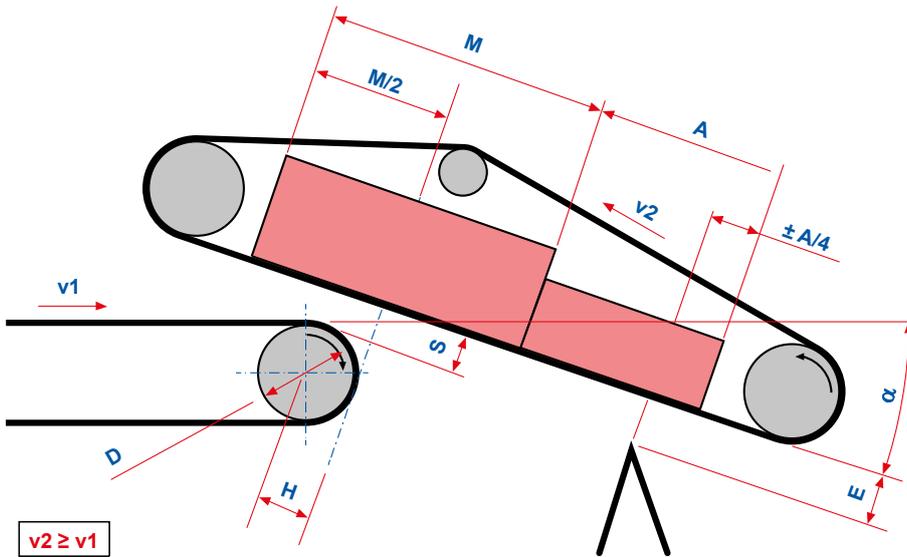
### 8.3.4 Positioning, in line above the reversing roller of your conveyor



If you have the option to position the overband magnet in line with the conveyor, this is always preferred. The advantage is that the conveyed material 'opens up' at the end of the belt (head pulley) and hangs in the air for a few milliseconds. This allows the magnet to pull the ferrous parts out of the product flow more easily.

The inclination angle of the standard overband magnet is limited to 5°. If the overband magnet needs to be installed at a greater inclination angle, specify this when ordering. Otherwise, contact us.

Position the axis of the main pole at the point where the material is closest to the magnet or, if your conveyor speed is low, at the point where the material leaves the conveyor. For the best separation result, install the overband magnet as low as possible.



Angle	v [m/s]	H [mm]
$\alpha = 5^\circ$	1.5	50
	2	50
	2.5	50
	3	65
	3.5	95
$\alpha = 10^\circ$	1.5	50
	2	50
	2.5	80
	3	130
	3.5	190
$\alpha = 15^\circ$	1.5	50
	2	65
	2.5	125
	3	200
	3.5	290
$\alpha = 20^\circ$	1.5	50
	2	90
	2.5	170
	3	270
	3.5	390
$\alpha = 25^\circ$	1.5	50
	2	120
	2.5	220
	3	350
	3.5	500

The inclination angle relative to the horizontal is limited to  $5^\circ$  for the standard overband magnet. Angle  $\alpha$  is between the overband magnet and your inclined conveyor.

### 8.4 Cooling with an external cooling system

Oil cooling by an external cooling system is supplied on request. Lower coil temperature gives higher magnetic force. An external cooler is required if the machine is fully enclosed.

If you wish to add external cooling, you can order it and connect it to the existing connectors. The standard cooling system is designed for horizontal installation. If you wish to install the overband magnet at an incline (up to 10°), indicate this when ordering.

**The coil housing must always remain unpressurized.** The vent plug must be positioned at the highest point. Keep the vent plug clean.

Recommended cooling system:

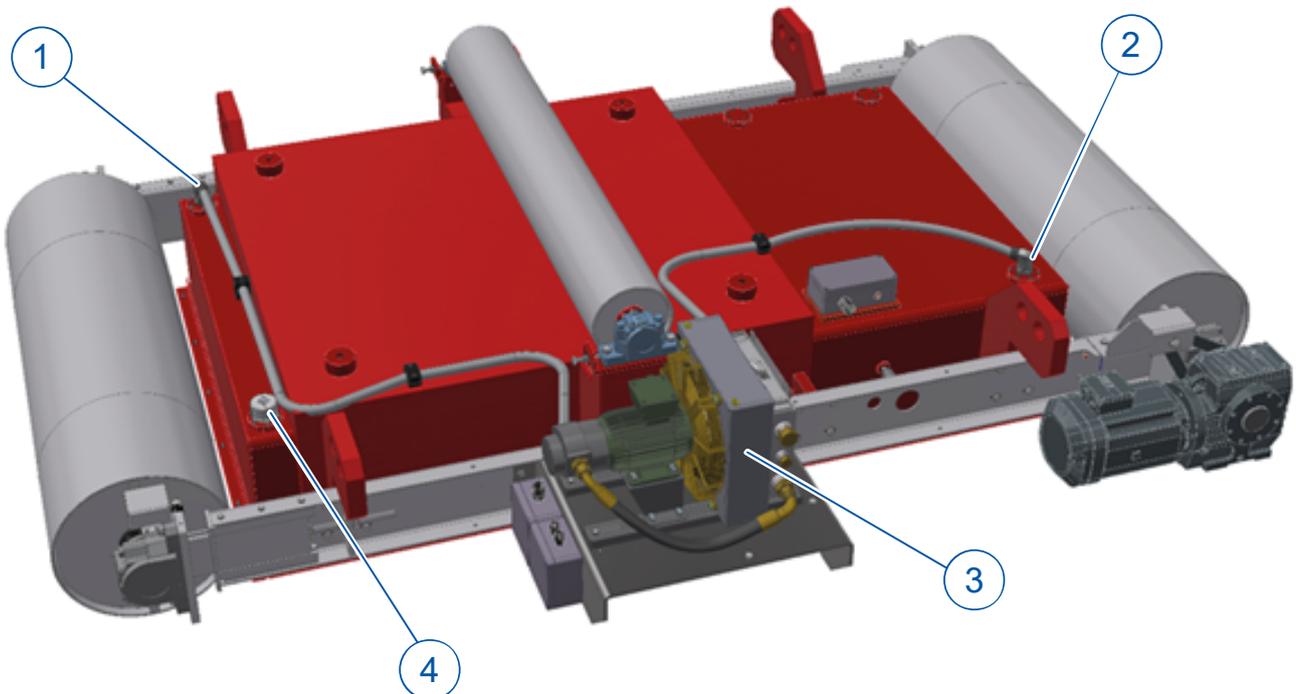
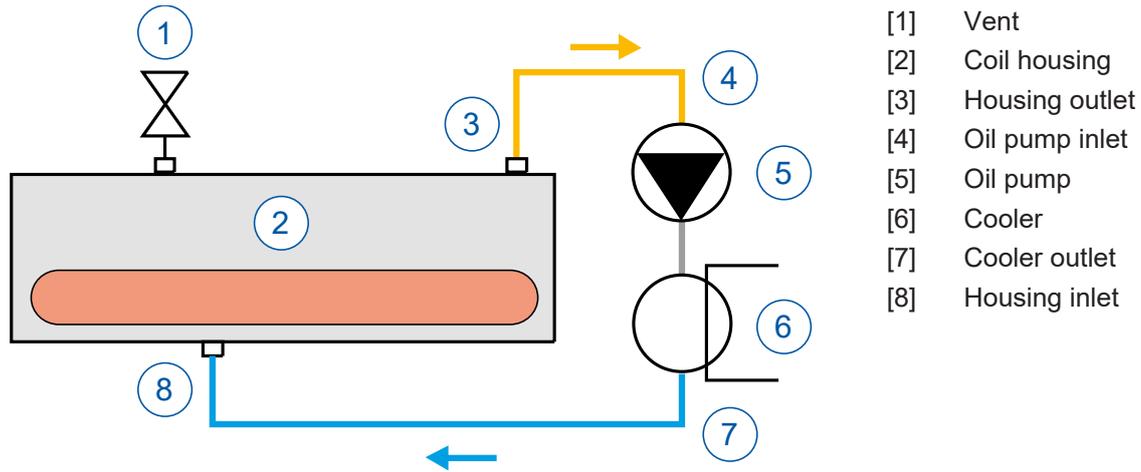


Figure: Example of an overband magnet with cooler

- [1] Coil housing oil outlet
- [2] Coil housing oil inlet
- [3] Cooler
- [4] Vent

## 8.5 Safety and ventilation

Hot transformer oil may cause some gas formation (vapour). This gas escapes via the vent cap on the filler opening. Do not use the overband magnet in unventilated spaces.

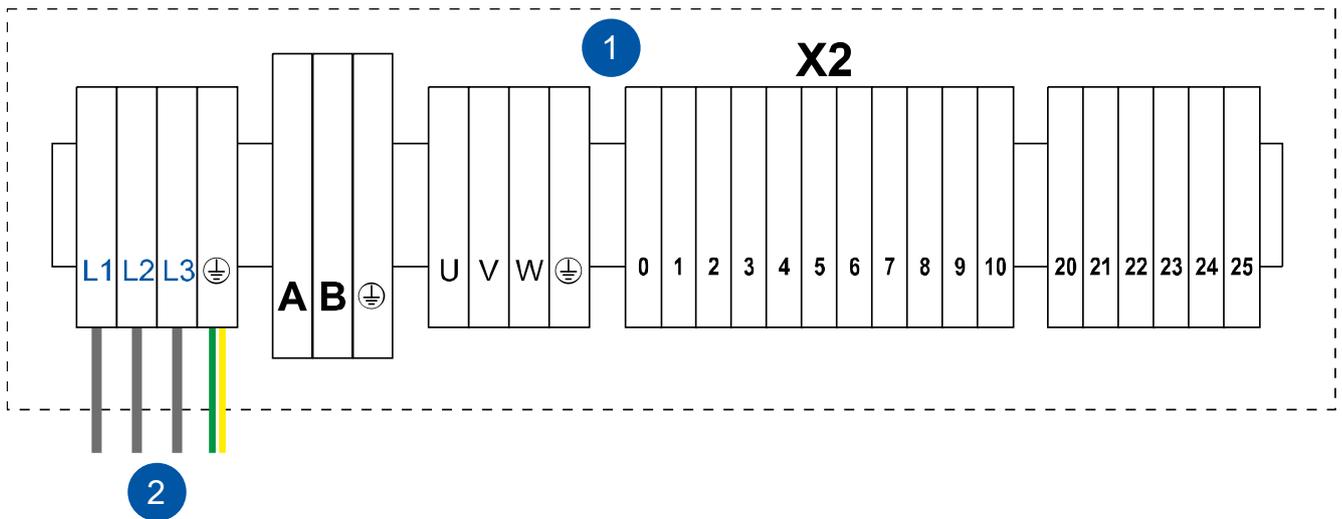
The magnet generates heat, so ensure free airflow around the machine.

Keep the vent cap on the filler pipe clean and check it regularly.

## 8.6 Connections to the control cabinet (applicable only to the standard control cabinet)

### 8.6.1 Incoming supply connections

Connect the supply cables to terminals L1, L2, L3 and earth in the control cabinet.



Legend:

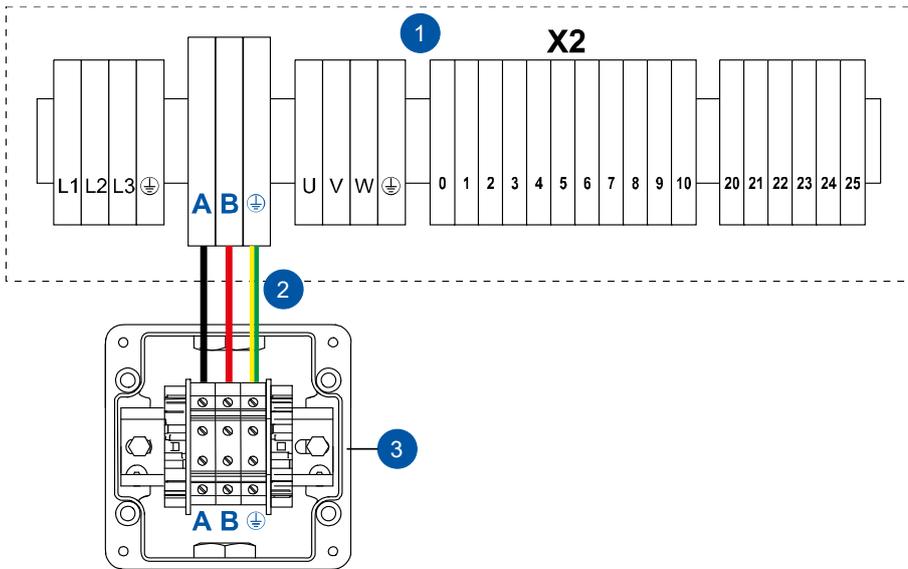
1. Control cabinet terminals
2. Customer incoming supply

### 8.6.2 Connecting a central control system

It is possible to connect a central control system to the terminals in the control cabinet.

Refer to the wiring diagrams inside the control cabinet.

### 8.6.3 Connecting the magnet coil



Legend:

1. Control cabinet terminals
  2. Cabling between the control cabinet and the junction box
  3. Junction box on the magnet coil housing
- Using a copper cable in accordance with the table below, connect to A, B and earth on the terminal strip in the control cabinet. Do not route the cables through insulated walls. In the junction box on the magnet coil housing, connect the conductors corresponding to A and B. The green-and-yellow terminal (earth) may be connected directly to the junction box, or to your equipotential bonding system in accordance with EN 60204-1 and then to the junction box.

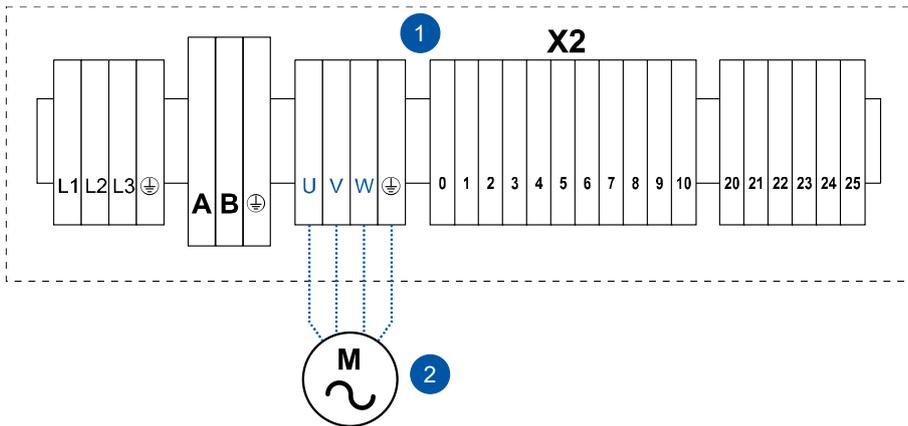
Terminal A in the control cabinet must be connected to terminal A in the machine (and B to B). The reason is that otherwise a permanent auxiliary pole (if present in your machine) may be irreversibly demagnetized.

Standard type	Product key	Max. recommended cable length [m]		
		Cables 16 mm <sup>2</sup>	Cables 25 mm <sup>2</sup>	Cables 35 mm <sup>2</sup>
SEEB080022	ROE-04-C-080-W-...	25	40	56
ZIEB100022	ROE-05-C-100-W-...	25	40	56
SEEB120022	ROE-07-C-120-W-...	25	40	56
SEEB140022	ROE-08-C-140-W-...	25	40	56
ZIEB160022	ROE-09-C-160-W-...	18	28	40
SWEB100022	ROE-06-C-100-M-...	25	40	56
SWEB120022	ROE-07-C-120-M-...	25	40	56
SWEB140022	ROE-08-C-140-M-...	25	40	56
SWEB160022	ROE-09-C-160-M-...	25	40	56
SWEB180022	ROE-10-C-180-M-...	18	28	40

Cable length = distance between machine and control cabinet

Cross-sectional area - each conductor

### 8.6.4 Connecting the motor



Legend:

1. Control cabinet terminals
2. Motor

**Note:**

If a cooler is installed, connect the motor in the same manner to the corresponding terminals in the control cabinet.

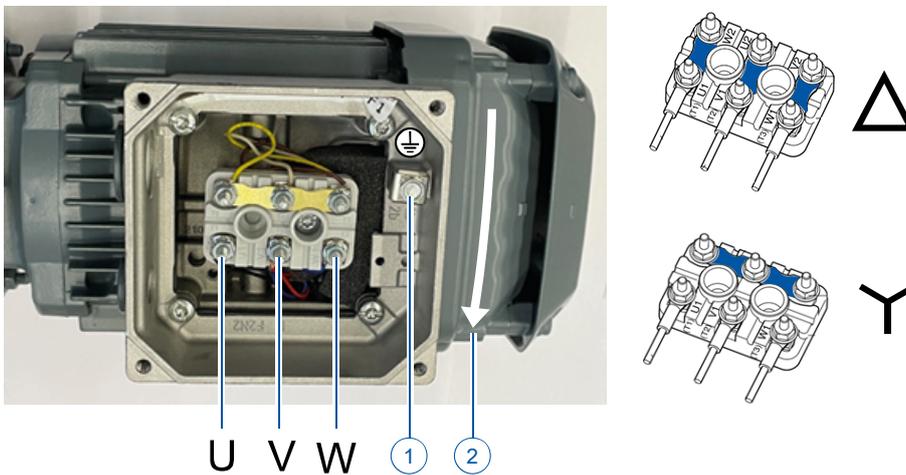
Connect the wiring to U, V, W and earth at the control cabinet.

- At the drive motor, connect the conductors corresponding to U, V, W and earth in the same way as at the control cabinet. Select the correct configuration 'Y' or 'Δ' according to the motor identification plate and your supply voltage.

**Check that the drive motor is rotating in the correct direction:**

This can be done by briefly switching on the motor.

If the direction of rotation is incorrect, swap two of the three phases (U – V), preferably directly at the motor terminal box.

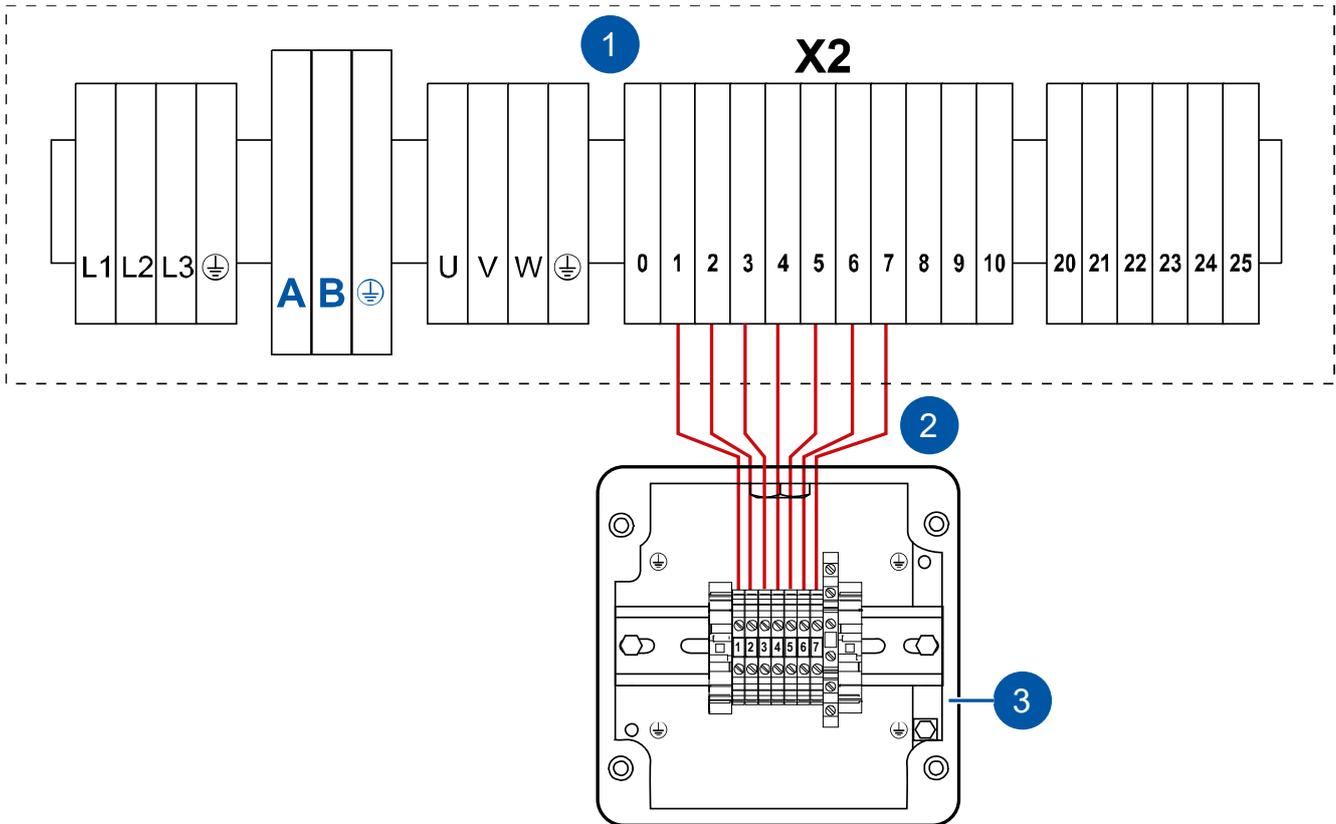


Legend:

1. Earth
2. Motor rotation direction

### 8.6.5 Connecting sensors to the standard control cabinet

Standard version with standard control cabinet:



Legend:

1. Control cabinet terminals
2. Cabling between the control cabinet and the junction box
3. Sensor junction box on the machine

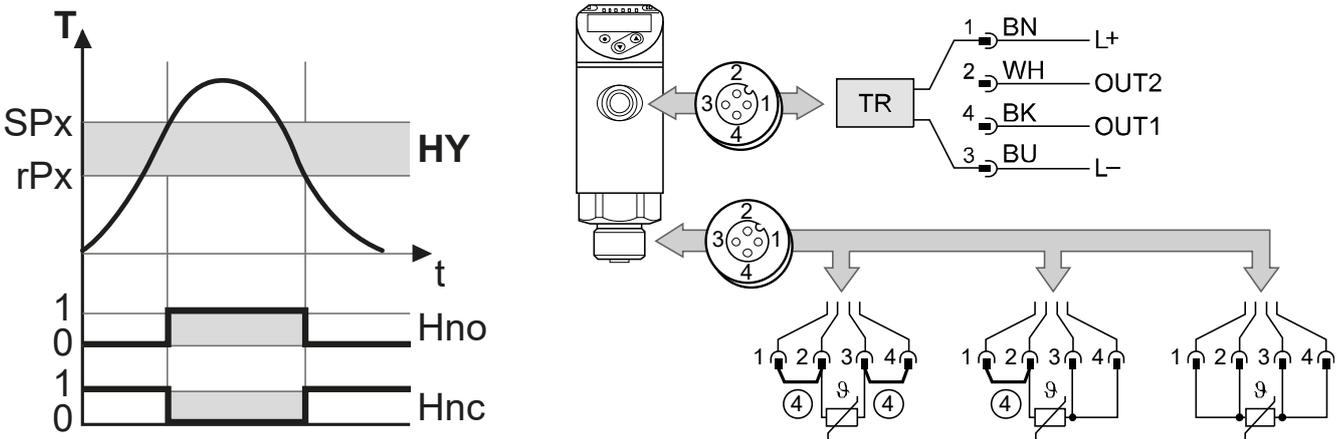
The junction box for the sensors is located on the machine. Connect it to the X2 terminals in the control cabinet as described (terminal 1 of X2 in the control cabinet corresponds to terminal 1 in the sensor junction box on the machine, etc.).

### 8.6.6 Setting the temperature control – sensor

The electronic sensor provides temperature control of the system and protects the machine against damage due to overheating.

Temperature-control settings – the temperature sensor monitors two setpoints: *SP1* and *SP2*.

- If NO external cooler is installed:
  - At SP1, one of the three electrical phases is switched off and the output power is reduced.
  - At SP2, the machine is completely switched off and the red button on the control cabinet illuminates.
- If an external cooler is installed:
  - At SP1, the cooler switches on.
  - At SP2, the machine is completely switched off and the red button on the control cabinet illuminates.



**Figure:** Temperature settings graph with installation diagram

Legend:

T	Temperature	BN	brown
HY	Cabling between the control cabinet and the junction box	WH	white
		BK	black
		BU	blue

The temperature sensor is factory-set to the following values:

Version without external cooler:	SP1=140°C, rP1=130°C, OUT1=Hno
	SP2=150°C, rP2=120°C, OUT2=Hnc
Version with an external cooler:	SP1=40°C, rP1=30°C, OUT1=Hno
	SP2=90°C, rP2=80°C, OUT2=Hnc

SP1 sends a signal to your control system via terminals 18 and 19.

SP2 sends a signal to your control system via terminals 14 and 15.

### 8.6.7 Rotation sensor

The rotation sensor is installed at distance 'l' as shown in the figure.

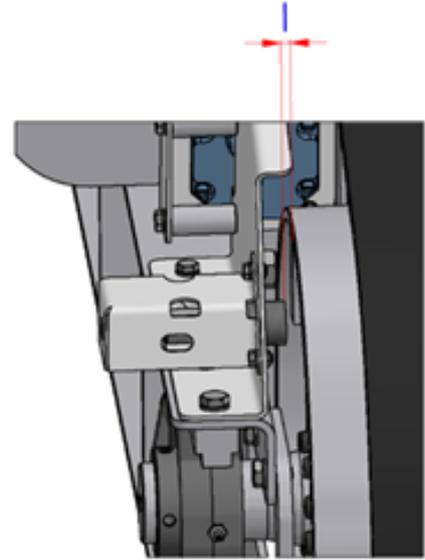
Distance 'l' is about 60% of the maximum operating range given in the documentation of the sensor used.

Example (standard sensor):

Operating range: 0–8 mm

Distance 'l' setting = 5 mm

- Setting the switch-off point (in case the sensor is replaced):
  - Stop the material flow under the overband magnet.
  - Check the belt tension and deflection, the bearings and the top roller(s).
  - After switching off the motor, check that the belt continues to run for a few seconds.
  - Check the rotational speed ('speed') in this condition.
  - Set the switch-off point to 80–90% of the revolutions determined in the previous step.

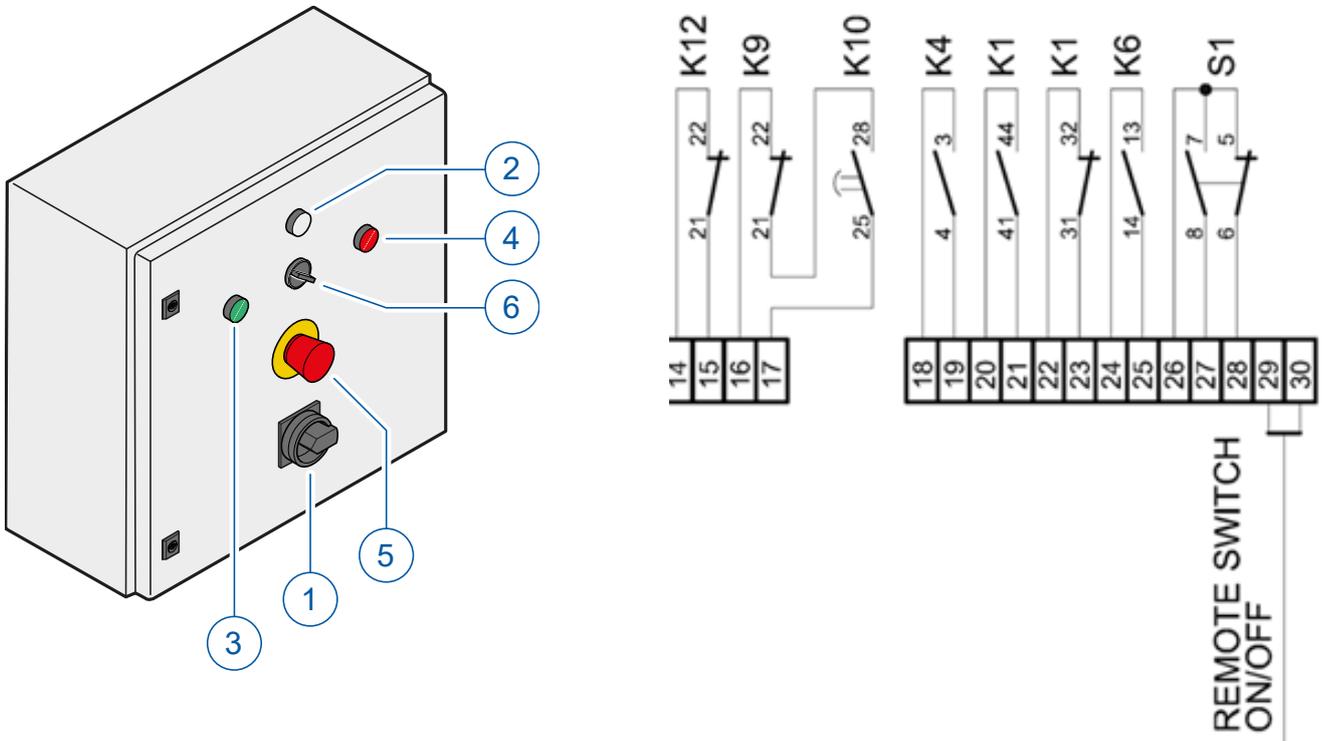


A fault signal is sent to your control system via terminals 16 and 17.

### 8.6.8 Connecting switches for remote operation (Remote)

There are two terminals in the **standard** control box for connecting remote-control switches (max. 5A/250V AC). Set switch [6] to REMOTE to activate it.

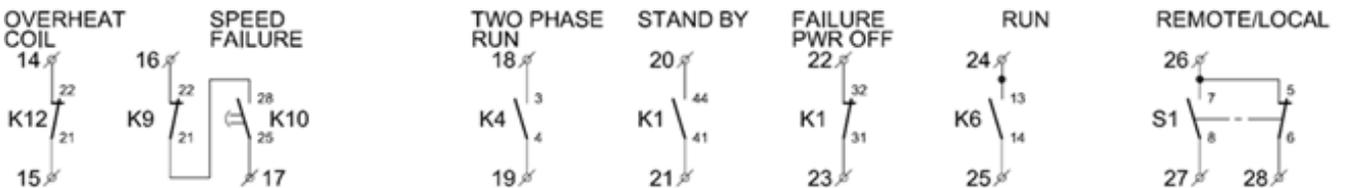
Terminals X2 are provided in the standard control cabinet for connection to your control system:



**Figure:** Standard control cabinet  
[Remote switch on/of]

The signals are as follows:

#### FAILURE REPORTS



- 1 'Overheat coil' signal — This indicates that the overband magnet has exceeded its temperature limit. The signal remains active until the overband magnet has cooled to the rP2 value set on the temperature sensor. Recommended action: Switch off the customer's material conveyor; the overband magnet will not separate ferrous material. Inspect the overband magnet.
- 2 'Speed failure' signal — Possible causes include a broken belt, incorrect tension, or a blockage. Recommended action: Switch off the customer's material conveyor; the overband magnet will not separate ferrous material. Inspect the overband magnet.
- 3 'Two phase run' (two-phase operation) — Reduced magnetic force until the magnet cools to the rP1 value set on the temperature sensor (the machine is running above its standard temperature limit). Recommended action: Inspect the overband magnet. The customer's material conveyor may continue to run, but separation efficiency will be lower.
- 4 'Standby' – Information: machine is ready for use.

- 5 'Failure PWR OFF' – A fault has occurred. Recommended action: Switch off the customer's material conveyor; the overband magnet will not separate ferrous material. Inspect the overband magnet.
- 6 'Run' – Magnet operating; rubber belt running.

## 8.7 Sealing material / earthing

The machine and the control cabinet must be connected to an equipotential bonding system using a Cu cable in accordance with EN 60204-1.

Ensure that all closure material between the overband magnet and your construction/installation has a surface resistance of less than 25  $\Omega$ .

### 8.7.1 Components used

Depending on the specific design, the machine may include an electric drive, conveyor mistracking switches, temperature sensors, a rotation switch and a cooler. The manufacturer and type of the components used can be found on the identification plates or on the spare parts/customer drawing. If required, the user manual and the declaration of conformity for the components used can be found on the manufacturers' websites. On request, we can also provide these documents.

### 8.7.2 After installation of the machine

- Apply the following steps to reduce residual hazards:
  - General hazards associated with magnetism, including hazards for people with implanted medical devices.
  - Entrapment of body parts between the rubber belt and rotating roller.
  - The attachment of the machine to other parts of the installation into which it is to be incorporated must be adequate. For example: access to the rotating belt must be prevented, the attachment method must be sufficient to support the weight, and adequate earthing measures must be taken to prevent the build-up of electrostatic charge.
  - Electrical wiring must be visually inspected regularly to prevent unintended electrocution.
  - Electrical connections must only be made by qualified electricians.
  - Dust deposits on the machine must be removed regularly to reduce the risk of fire.
  - Observe the rules for the use of oil.
  - Ferromagnetic parts may fall from the machine at any time.
  - Prevent the operator from slipping near the machine.
  - Define the rules and methods for cleaning and maintenance, and train the personnel.

## 9 Start-up

### 9.1 Checks before and during start-up

Before start-up, check that:

- the belt tension is correct (sag is acceptable)
- the machine, including rollers (and cooler), is clean and free of trapped objects
- the machine, suspension and structure show no damage or defects
- the electrical connection is correct
- the belt deflection and alignment are correct as specified in this manual
- all protective covers are properly fitted
- no other sources of danger are present

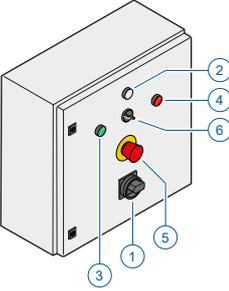
#### 9.1.1 Start-up

- Switch on the machine.
- If the machine's belt runs correctly, then switch on your conveyor with material.

During start-up, check that:

- the machine/installation has no damage or defects
- the motor runs correctly (right direction, no overload, no speed fluctuations, no loud noises)
- the belt is properly aligned
- the magnet is properly cooled (surfaces are clean and/or the external cooler is running)
- the ambient temperature does not exceed the maximum ambient temperature specified in the data sheet
- all other parts of the machine/installation function as described in this manual, supplemented by the function descriptions in the attached data sheet

## 9.2 Working principle

Standard control cabinet	No.	Description	Type	Colour	Function
	1	Main switch	Rotary switch	Black	Switches the control cabinet supply on/off.
	2	Standby	Illuminated button	White	Illuminated button lit – machine ready for use.
	3	Activate	Illuminated button	Green	Switches on the magnet and motor.
	4	Fault	Illuminated button	Red	Switches off the magnet and motor. Illuminated button lit – fault.
	5	Emergency stop	Button	Red (button), yellow (background)	Immediate motor and magnet stop in an emergency.
	6	Local/Remote	Switch	Black	Switch between remote control and local control.

### 9.2.1 Start-up

- 1 Switch on the mains supply with the main switch **(1)**.
- √ **Check** that the electromagnet is ready – the white illuminated button should light **(2)**.
- 1 Set the LOCAL/REMOTE switch **(6)** to LOCAL (control from the control cabinet) or REMOTE (control by the central control system), as appropriate for your application.
- 2 Switch on the electromagnet and the belt with button **(3)** or by a remote signal.

*The green illuminated button lights **(3)**.*

- 3 Start the conveyor with the material to be separated.
- √ **Check** the motor's direction of rotation.
- √ **Check** the belt alignment.
- √ **Check** regularly that the overband magnet and the separation are functioning correctly.

### 9.2.2 STOPPING

- 1 Stop the conveyor with material.
- 2 Stop the magnet by pressing button **(4)** or via the remote control.  
*The green illuminated button **(3)** goes out.*
- 3 Switch off the mains supply with the main switch **(1)**.

### 9.2.3 EMERGENCY STOP

Press the emergency stop button **(5)** and the power supply is interrupted – this also cuts all power to the magnet. If no emergency stop is present, the main switch must be switched off, or (preferably) an emergency stop should be fitted on or near the machine.



#### NOTICE

Do not switch on the electromagnet without the rubber belt moving! There may be insufficient cooling and the rubber belt or other components may be damaged!

## 10 Maintenance and inspection



### CAUTION

- ▶ Carry out all work on the machine with the material flow stopped and the installation switched off (LOTO).
- ▶ The manufacturer cannot be held liable for the safety of personnel involved in maintenance or service work.

- Always inform operating personnel of scheduled inspections, maintenance, repairs and faults.
- Regularly check that all warning pictograms are still present in the correct locations on the machine. If the warning pictograms are missing or damaged, replace them immediately in their original locations.
- Keep the installation as clean as possible to prevent contamination between the belt(s) and rollers.
- Contamination causes increased wear and/or belt mistracking.
- Check daily that the rollers are clean, the belt is aligned, the belt is in good condition and the belt tension is correct.
- Replace the belt if it is damaged. At the same time, inspect the roller(s) and other accessible parts of the machine.

### 10.1 Cleaning

The machine must be kept clean. The electromagnet generates heat and must be properly cooled. Check daily for layers of dust and trapped material in the machine. Any dust layers and trapped material must be removed immediately. If the dust deposits cannot be cleaned properly, an external cooler must be installed. See section 'Cooling with an external cooling system [▶ 24]'.



**Figure:** Overband magnet with heavy dust layers

A clean magnet operates significantly more efficiently than a contaminated magnet.

An electromagnet without external forced cooling that is covered with dust deposits may overheat and cause a fire.



### NOTICE

Follow the safety procedure. Observe the instructions in the 'Safety' chapter.

### 10.2 Corrosion protection

Regularly apply preservative oil to exposed carbon steel parts (e.g. shaft ends, taperlocks).

### 10.3 Check the pictograms

- Regularly check that all stickers with warning pictograms and the identification plate are in the correct place on the machine. If a sticker or the identification plate is no longer legible or is missing, immediately affix new ones in the original locations.

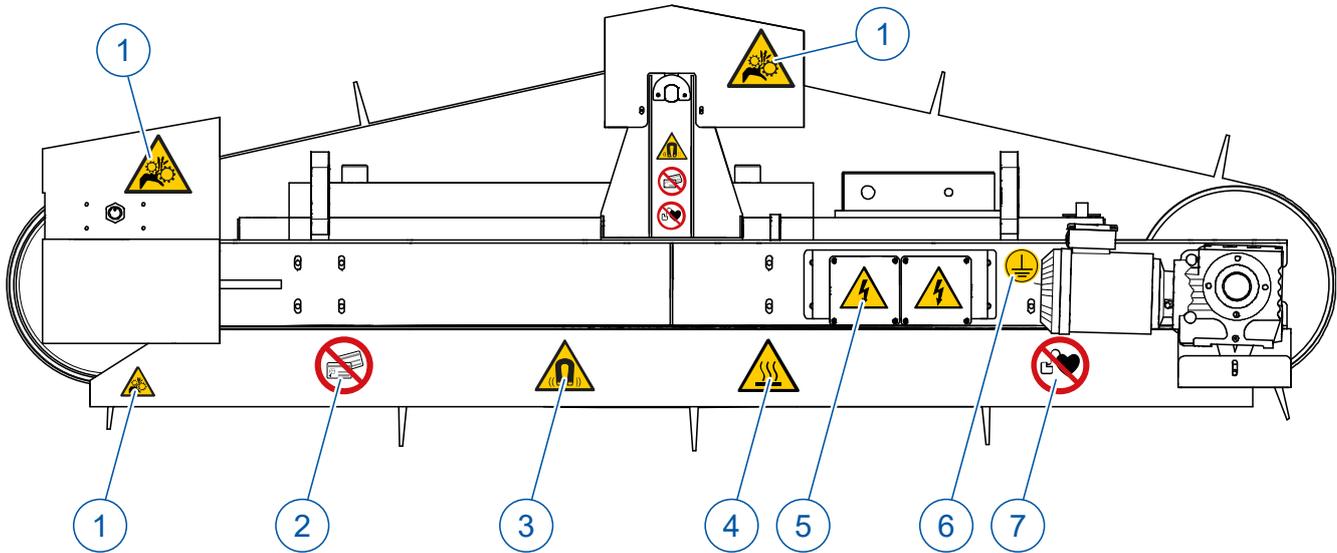


Figure: Overview of warning pictograms

- |   |  |
|---|--|
| [1] Risk of being pulled into the machine (sticker on both sides) | [5] Risk of fatal electric shock (near the junction box)             |
| [2] Damage to magnetically sensitive objects                      | [6] Earthing symbol and identification plate (at motor)              |
| [3] Strong magnetic field   | [7] Life-threatening danger to people with implanted medical devices |
| [4] Risk of burns from hot surfaces                               |  |

### 10.4 Bearing systems

- Regularly check whether the bearings produce more noise than normal or are more than 10 °C warmer than the ambient temperature. If so, determine the cause and correct the problem(s). Replace the grease and/or bearings if necessary. The belt must take a few seconds to come to a stop after the motor is switched off. If the belt stops immediately, first check the belt tension (sag).

To determine the bearing replacement interval, combine your own experience with bearings in similar applications with the recommended and estimated intervals.

#### 10.4.1 Lubrication (re-greasing)

All bearing systems used contain grease-lubricated bearings that are protected against contamination and moisture. Use only SKF LGMT2 grease to lubricate the bearings. Check the bearings weekly, clean them and re-grease them.

Shaft diameter drive/reversing roller [mm]	Recommended grease volume (per bearing) [cm <sup>3</sup> ]
55	1.7
60	1.8
65	3.6

The top rollers are fitted with maintenance-free bearings.

## 10.5 Aligning and adjusting the belt tension of the rubber belt



### NOTICE

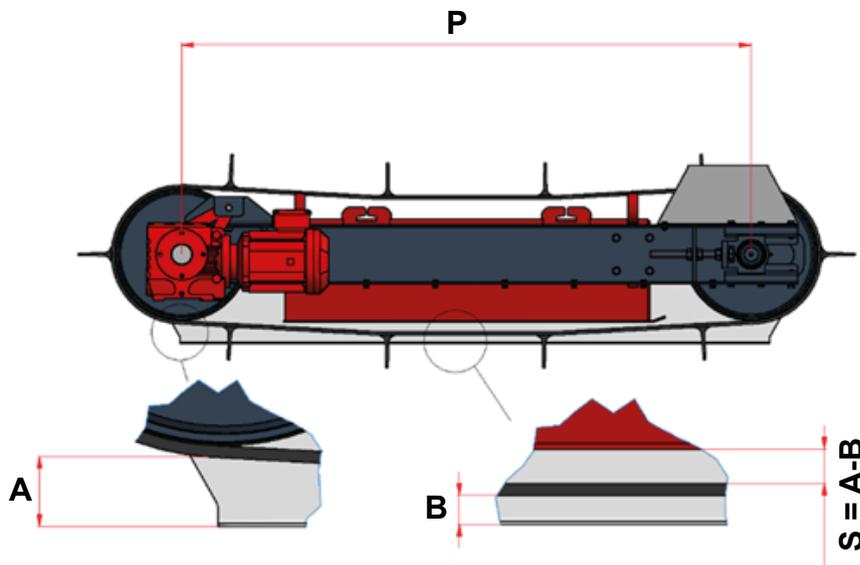
Incorrect alignment and adjustment of the belt may cause damage and accelerated wear of components. Goudsmit Magnetics does not provide any warranty for consequential damage caused by incorrect replacement of the rubber belt or incorrect adjustment of the belt tension.

- ▶ Check the belt regularly. Replace the belt in case of excessive wear, loss of thickness, splitting, tearing or damage to the cleats. If the belt is not properly aligned, it must be replaced.

If the belt tension is too high, excessive forces are exerted on the shafts and bearings of the rollers, increasing the risk of bearing or shaft failure.

A misaligned belt is a source of ignition.

A misaligned belt may be damaged by running off the roller, may result in poorer Fe separation and/or may damage the wear plate beneath the magnet.



(P) Roller pitch [mm]	1000	1200	1400	1600	1800	2000	2200	2400	2600	2800	3000
(S) Sag = A-B [mm]	35	42	49	56	63	70	77	84	91	98	105

### Note:

The recommended sag is for standard rubber belts. For reinforced belts, the sag must be increased by 40 to 80%, depending on the type.

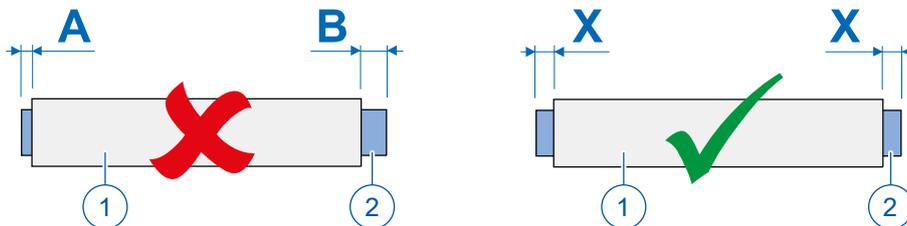


Figure: Adjusting belt alignment

1. Belt
2. Roller

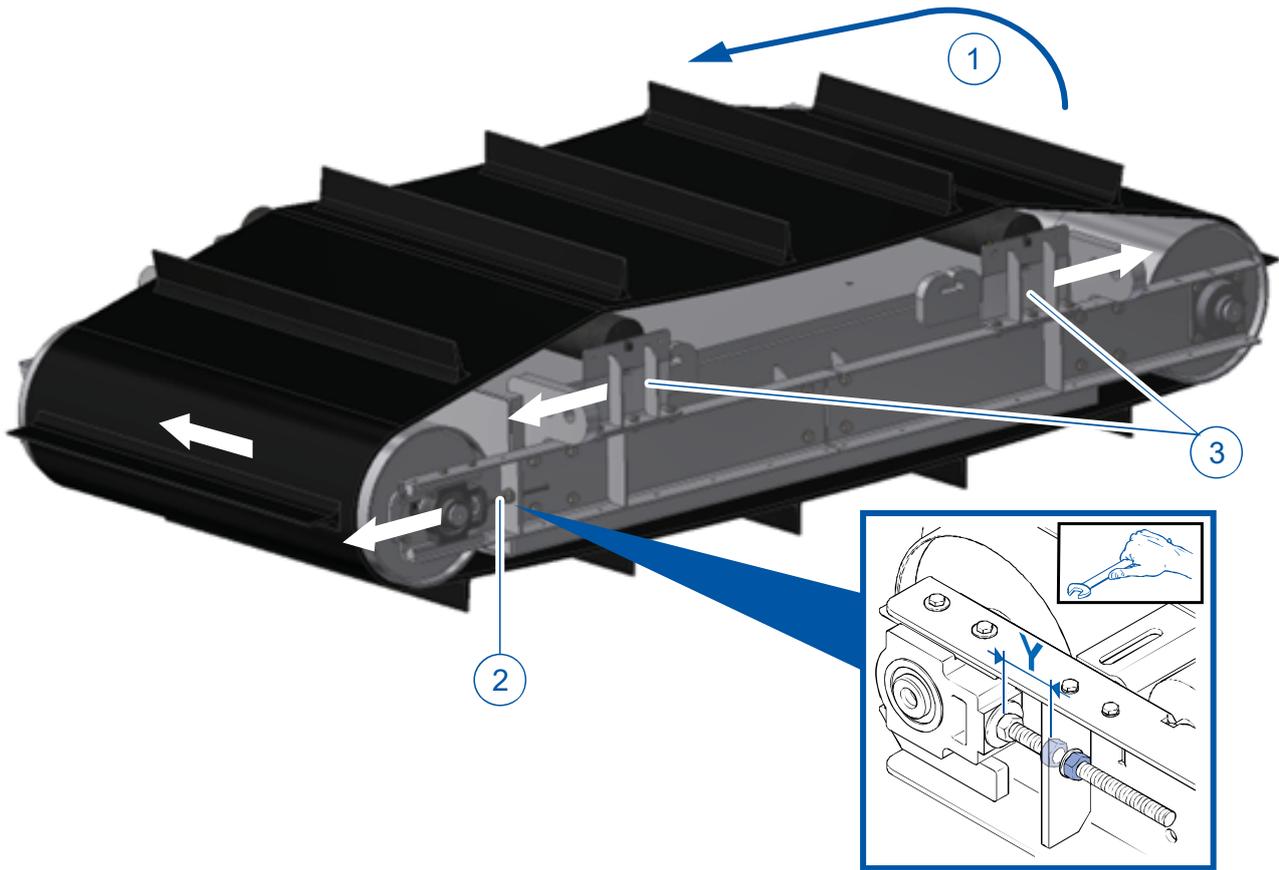


Figure: Adjusting belt tension

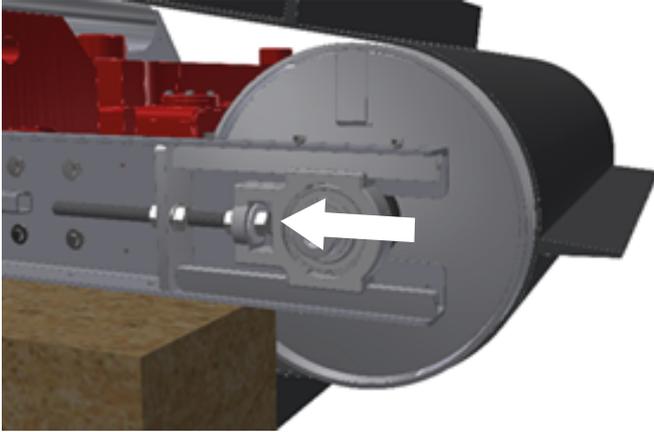
1. Direction of rotation
2. Tensioner
3. Top roller holder

- Use the belt tensioner as the correct method to align the belt for minor adjustments.
- Check that the tensioners are set at the same distance (Y) on both sides.
- If the difference (Y) needs to be corrected or the belt needs to be moved significantly: Loosen the bolts slightly and shift the top roller holder (2–3 mm) at one end. Check the lateral movement of the belt. The arrows in the figure above indicate the belt's direction of movement.
- After alignment, check the belt deflection.
- Note: After switching off the drive, the belt must continue to run for a few seconds before stopping. If the belt stops immediately, check the deflection, the drive and the bearing.

## 10.6 Belt replacement

Move the machine with a crane to a safe location with a solid surface and sufficient clearance. After assessing the local conditions for safe working, the belt can be replaced for variants A and B.

- Cut and remove the old belt.
- Inspect and clean the wear plate and all accessible components.
- Release the tensioners towards the magnet.



<b>A (belt with hinged splice)</b> <b>Advantage: relatively easy to install</b> <b>Disadvantage: shorter service life</b>		<b>B (vulcanization)</b>	
1	Ensure that all components of the belt are non-magnetic.	1	Fit the new belt. (Note the preferred running direction of the belt.)
2	Fit the new belt. (Note the preferred running direction of the belt.)	2	Vulcanize the loose ends of the belt together.
3	Join the loose ends of the belt.		
<b>C (endless belt)</b>			
		<b>Observe work safety!</b> The manufacturer is not responsible for the safety of personnel. The following tips are for guidance: Ensure proper protection, especially when lifting and handling suspended loads. Do not stand under the suspended load! When installing the belt, there is a risk of crushing injuries.	

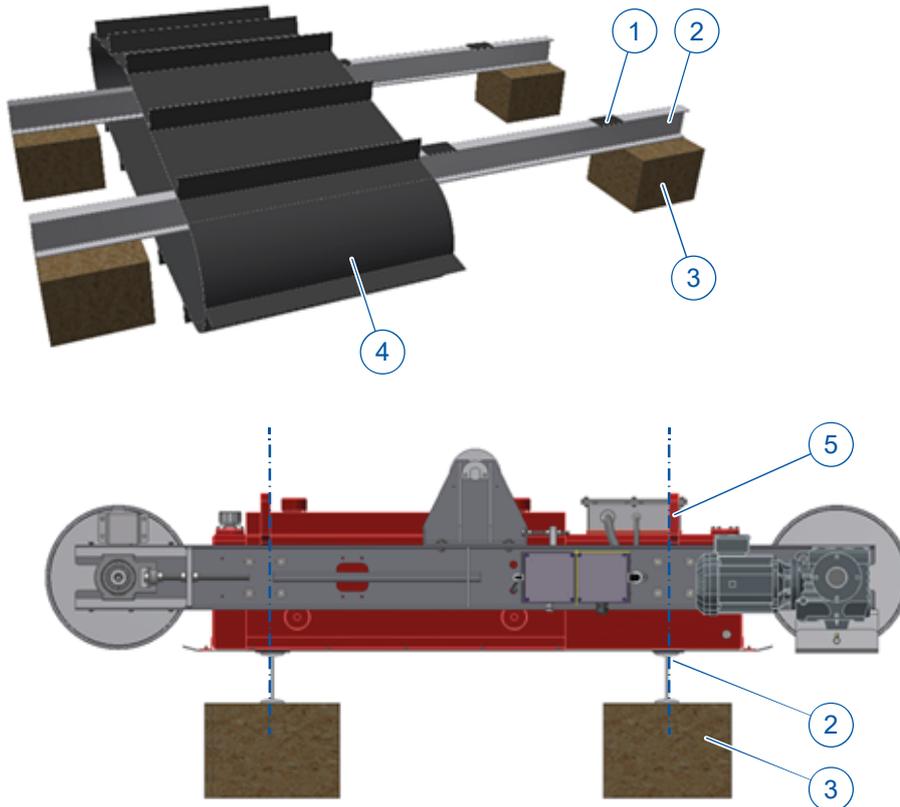
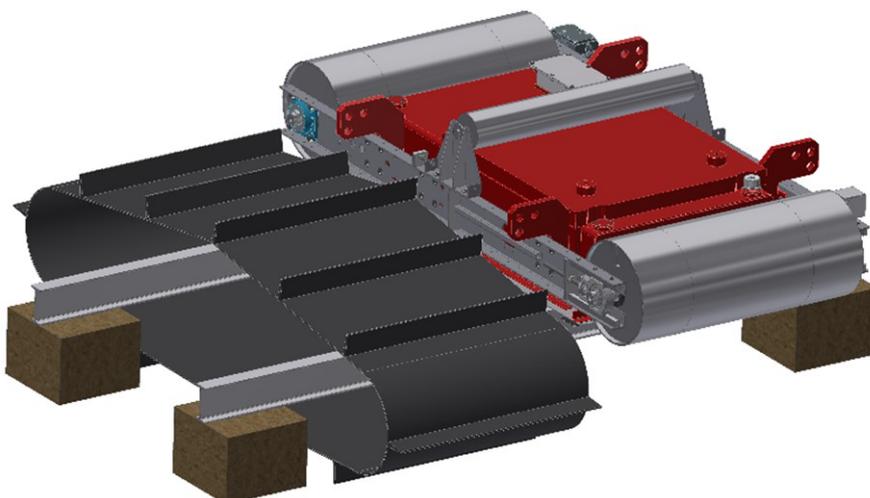


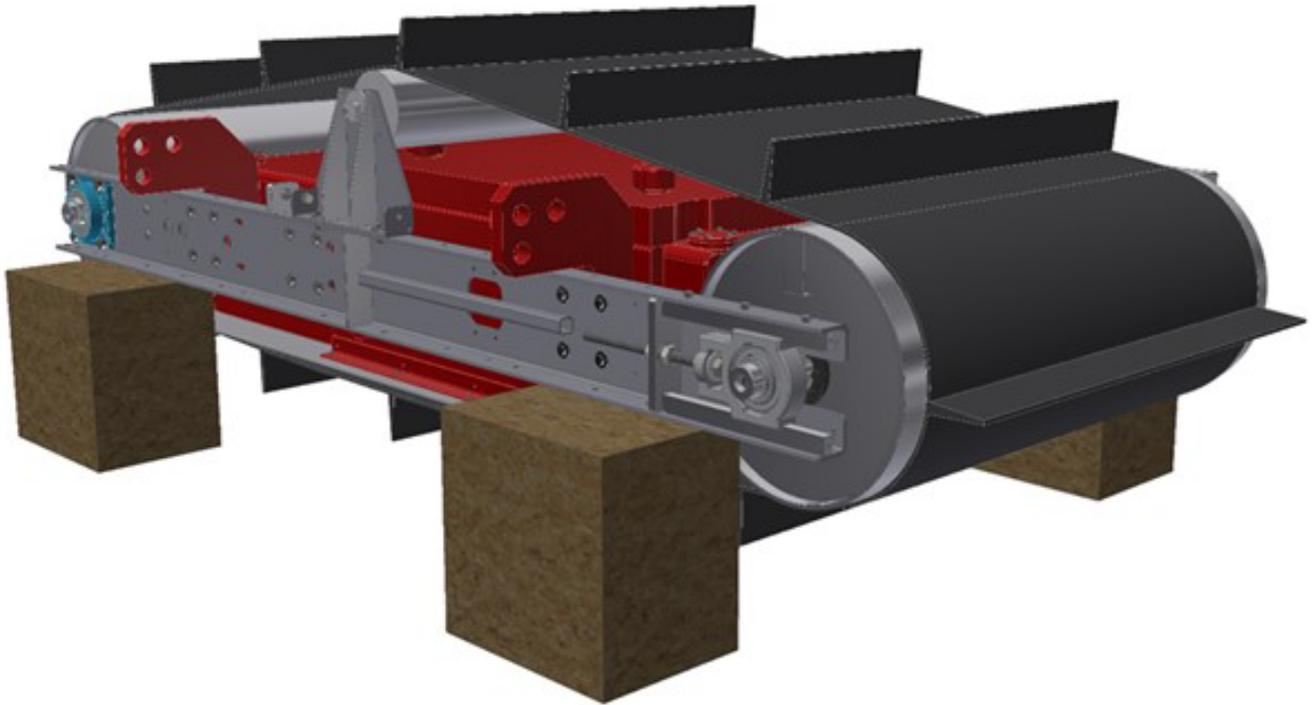
Figure: Belt replacement

- [1] Rubber strip
- [2] Beam (e.g. I-profile)
- [3] Support (e.g. wood blocks)
- [4] Belt
- [5] Lifting point

- Work on a floor with sufficient free space.
- Remove the covers.
- Place the new belt [4] (pay attention to the belt's preferred running direction) on suitable beams [2]. The beams must safely support the weight of the machine. Position the beams and rubber strips [1] according to the magnet's dimensions (see figure above).
- Lift the machine with a crane and set it down on the prepared support, with the beams positioned beneath the lifting points [5].



- Using the crane, with the help of colleagues, fit the new belt. Observe the safety instructions.
- Raise the machine slightly to remove the beams.
- Place the machine sideways onto the support.



- Fit the roller guards, align the belt and set the correct belt sag.
- Lift the machine slightly. Fit the remaining covers.

## 10.7 Checking the oil level and replacement

Check daily that the machine is not leaking oil.

Check the oil level monthly once the magnet has cooled (oil expands when heated).

Measure via the vent cap on the oil filler. The machine must be level. The oil level should be between mark [1] and the end of the scale [2].

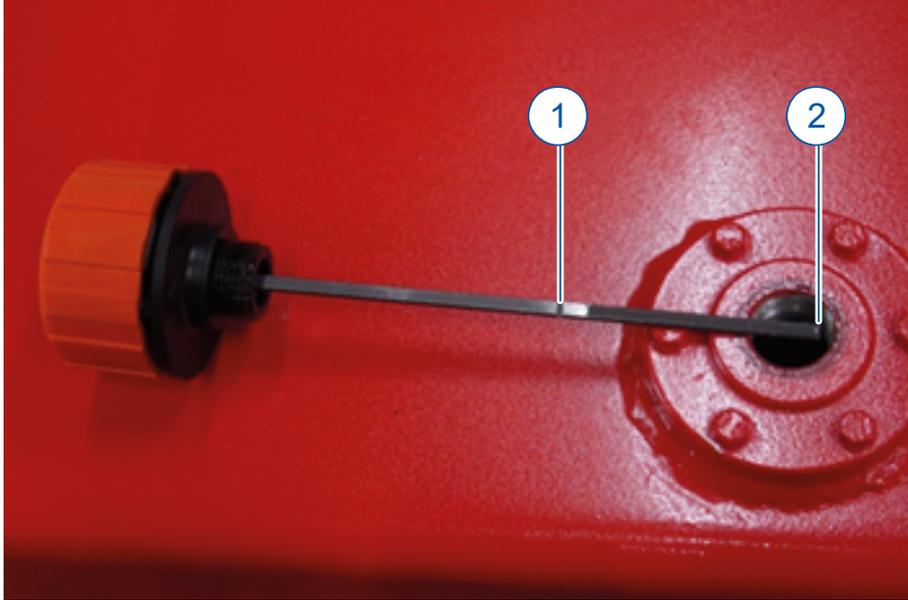


Figure: Vent cap with dipstick

### After 3 years of operation

Option 1. Replace the oil.

Option 2. Have the oil analysed in a laboratory:

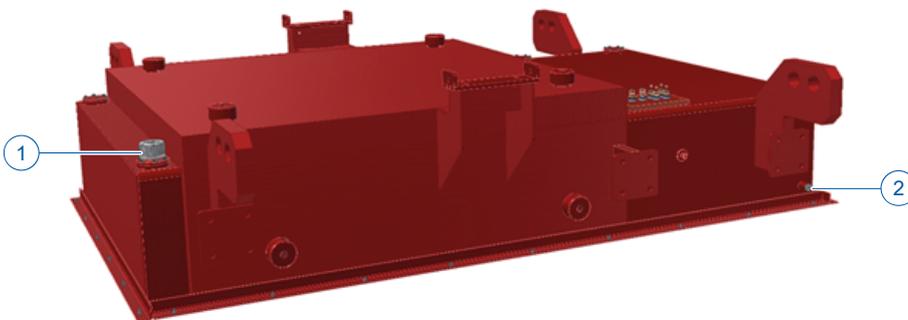
- viscosity – new oil has max. 10-12 mm<sup>2</sup>/s at 40 °C. Limit value is 14 mm<sup>2</sup>/s at 40 °C.
- acidity – the new oil has max. 0.01 mg KOH/g. Limit value is 0.5 mg KOH/g.
- water content. Limit value is 40 mg/kg

If one or more limits are reached (or exceeded), the oil must be changed. If the oil is acceptable, the check must be repeated annually.

Contaminated oil does not cool the coil sufficiently and can cause irreparable damage to the machine.

If the oil level becomes too low, this will cause the electromagnet to overheat, which can cause serious damage to the machine. Water (condensate) can cause a short circuit in the coil.

If the oil level is too high, oil will leak from the filler cap (due to expansion of the heated oil). This hot oil can cause burns.



Key

1. Oil filler cap with vent
2. Drain port fitted with a drain plug, available on both sides

## Oil volume in the magnet housing

Standard type	Product key	Magnet dimensions [mm]	Oil [litres]
ZIEB080022	ROE-04-C-080-W-...	1249 x 760 x 410	141
SEEB100022	ROE-05-C-100-W-...	1555 x 950 x 437	234
ZEEB120022	ROE-07-C-120-W-...	1870 x 1060 x 470	360
ZIEB140022	ROE-08-C-140-W-...	2200 x 1330 x 490	550
ZIEB160022	ROE-09-C-160-W-...	2488 x 1520 x 583	945
SWEB100022	ROE-06-C-100-M-...	1000 x 1000 x 501	161
SWEB120022	ROE-07-C-120-M-...	1200 x 1200 x 550	243
SWEB140022	ROE-08-C-140-M-...	1400 x 1400 x 600	690
SWEB160022	ROE-09-C-160-M-...	1600 x 1600 x 700	870
SWEB180022	ROE-10-C-180-M-...	1800 x 1800 x 820	1160

The oil volume values apply to horizontal installation. For machines with an external cooling system, the oil volume must be increased.

## Oil leakage

Switch the machine off immediately in the event of an oil leak. Take safety measures to protect operators and prevent ignition. Locate the leak and seal it if possible. Collect the oil in a suitable container in the event of major damage. Arrange repair of the magnet.

## Replacing the oil in the coil housing

- Place a container under the drain port to collect the oil.
- Remove the filler cap.
- Remove the drain plug.
- Allow the oil to drain into the container.
- Refit the drain plug.
- Fill the coil housing with new oil via the oil filler. Top up until approximately 80% of the housing is filled. The oil level must be between the end of the scale and the mark. Preferably use transformer oil, e.g. Petronas ELEKTRON X..
- Fit the filler cap and tighten.

## 10.8 Gear motor



### NOTICE

Disconnect the power supply to the motor and ensure that it cannot be switched on unexpectedly. Wait until it has cooled down.

Regularly check if the motor produces more noise or heat than normal. If so, determine the cause and correct the problem as quickly as possible to prevent further damage.

The table below shows the general inspection and maintenance intervals as an indication of the necessary inspection and maintenance work.

Gear motor	
Frequency	What must be done
Every 3,000 operating hours, at least every 6 months.	<ul style="list-style-type: none"> <li>Check the oil and oil level.</li> <li>Check the seals visually for leaks.</li> <li>For gear motors with a reaction arm: Check the rubber buffer and replace if necessary.</li> </ul>
Depending on operating conditions (see chart below), at least every 3 years.	<ul style="list-style-type: none"> <li>Replace the oil.</li> <li>Change the grease in the anti-friction bearings (recommended).</li> </ul>
Depending on the oil temperature.	<ul style="list-style-type: none"> <li>Replace the oil seal (do not fit in same groove).</li> </ul>
Depending on operating conditions (see chart below), at least every 5 years.	<ul style="list-style-type: none"> <li>Replace the synthetic oil.</li> <li>Change the grease in the anti-friction bearings (recommended).</li> </ul>
Depending on the oil temperature.	<ul style="list-style-type: none"> <li>Replace the oil seal (do not fit in same groove).</li> </ul>
Some gear motors (such as SEW R07, R17, R27, F27 and Spiroplan®) are lubricated for life and therefore maintenance-free.	
Varies (depending on external factors).	<ul style="list-style-type: none"> <li>Touch up or renew the surface/corrosion protection coating.</li> </ul>

Motor	
Every 10,000 operating hours.	Inspect the motor: <ul style="list-style-type: none"> <li>- check the ball bearings and replace them if necessary</li> <li>- replace the oil seal</li> <li>- clean the cooling air ducts</li> </ul>
	[1] Operating hours [2] Continuous oil bath temperature Average value per oil type at 70 °C [3] CLP PG (polyglycol) [4] CLP HC / HCE (synthetic hydrocarbons / synthetic hydrocarbons + ester oil) [5] CLP / HLP / E (mineral oil / hydraulic oil / ester oil)  The replacement interval depends on the temperature.
Replacement intervals of the oil in the gear motor	

Table: General inspection and maintenance intervals for the gear motor

The type and quantity of oil are stated on the drive label.

Motor movement ('rocking') (up to 1% of the motor length) during operation is normal and does not affect the functioning of the machine. If you require more detailed information about the gear motor, contact our office or consult the website of the gear motor manufacturer.

## 11 Troubleshooting

Use the following table to search for faults, determine the possible cause and find the solution. For a fault that is not in the table, contact Goudsmit Magnetics customer service.

Fault	Possible cause	Possible solution
Magnet does not separate or poorly separates ferromagnetic (Fe) pieces.	Magnet is switched off or the voltage is too low.	<ul style="list-style-type: none"> <li>Check the switch on the control cabinet and the input voltage.</li> </ul>
	Magnet is installed too high above the conveyor.	<ul style="list-style-type: none"> <li>Mount the magnet lower.</li> </ul>
	Parts that are not attracted are not sufficiently ferromagnetic.	<ul style="list-style-type: none"> <li>Use a small permanent magnet to check whether the parts to be separated are magnetic.</li> </ul>
	Iron parts of your conveyor installation within the range of the magnet reduce the separation capacity.	<ul style="list-style-type: none"> <li>Check the range of the magnet with a ferromagnetic sample to determine whether parts of your conveyor installation are being attracted by the magnet. If so, these parts must be replaced with non-ferromagnetic parts.</li> </ul>
	The speed of your conveyor is too high.	<ul style="list-style-type: none"> <li>Reduce the speed of your conveyor.</li> </ul>
	Emergency stop, rotation speed control or belt mistracking switch activated (if present).	<ul style="list-style-type: none"> <li>Check them and resolve the issue.</li> </ul>
Magnet fault – red indicator light and/or remote-control signal on the standard control cabinet (feature not present on all control cabinets).	Magnet coil short circuit.	<ul style="list-style-type: none"> <li>Have the magnet coil repaired by Goudsmit Magnetics.</li> </ul>
Belt not aligned properly.	Objects jammed in the machine forcing the belt to one side.	<ul style="list-style-type: none"> <li>Remove objects.</li> </ul>
	Roller(s) are misaligned.	<ul style="list-style-type: none"> <li>Realign the roller(s).</li> </ul>
Belt motor makes excessive noise	Belt tension is too high.	<ul style="list-style-type: none"> <li>Reduce the belt tension using the tension roller.</li> </ul>
	Motor oil level is low.	<ul style="list-style-type: none"> <li>Top up the motor oil to the correct level.</li> </ul>
	Motor has a defect or fault.	<ul style="list-style-type: none"> <li>Repair or replace the motor.</li> </ul>
Belt motor trip (red indicator light): - Excessive current [A]. - Thermal overload. - Other cause.	- Object(s) trapped between the belt and roller(s). - One or more objects under the belt holding it or slowing it. - Emergency stop, rotation speed control and/or belt mistracking switch activated.	- Remove the object(s) and allow the motor to cool if necessary. - Check and resolve the issue.
Bearings make too much noise.	Belt tension is too high.	<ul style="list-style-type: none"> <li>Reduce the belt tension.</li> </ul>
	Bearings are worn out.	<ul style="list-style-type: none"> <li>Replace the bearings.</li> </ul>
	Bearing grease is too old.	<ul style="list-style-type: none"> <li>Replace the bearing grease.</li> </ul>

## 12 Service, storage and disassembly

### 12.1 Customer service

Have the following information ready when contacting customer service for assistance:

Identification plate (complete)

Nature and extent of the problem

Time when the problem occurred and any accompanying circumstances

Suspected cause

### 12.2 Spare parts

If a part needs to be replaced, you can order it on the basis of the type, serial number (see identification plate) or the article number from the spare parts list/drawings. If you store a part, keep it in a dry and dark place (out of direct sunlight).

### 12.3 Long-term storage

If the machine will not be used for an extended period, it is recommended to store it in a safe, dry place to keep vulnerable and/or sensitive parts protected.

Store the machine in a dark place (out of direct sunlight).

#### Checks/tasks after long-term storage:

- Condition of the belt. If the belt is 'stuck' to the magnet, carefully release it by hand and set the normal sag.
- Lubricate the bearings.
- Check the oil quality and oil level.
- Carefully follow all start-up checks.

### 12.4 Dismantling/disposal

When dismantling and/or disposing of the machine's components separately, the different properties of the components (magnets, iron, aluminium, electrical components, insulating material, etc.) must be taken into account. Entrust this task preferably to a specialized company and always comply with local regulations regarding the disposal of industrial waste.



#### NOTICE

Note the presence of magnetism where a permanent magnet is involved. Inform the waste handler about the dangers of magnetism. See also the 'Safety' chapter.

