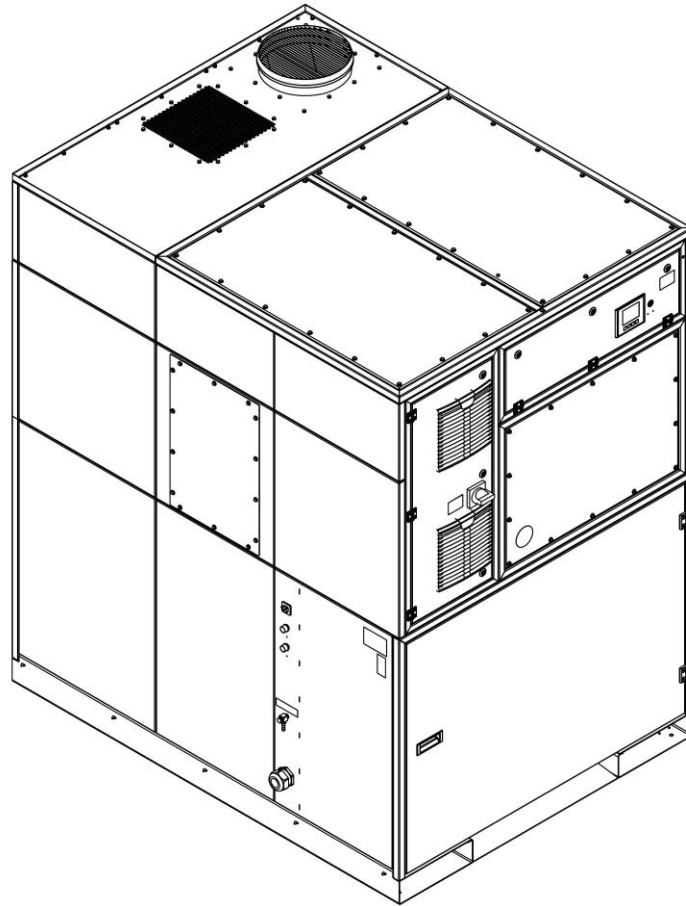




VacuFil 2000 - 4000

EN – Operating Manual

Typenschild einkleben

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1 General

1.1 Introduction

This manual is an essential aid for the proper and safe operation of the product.

These operating instructions contain important information to ensure safe, proper and efficient operation of the product. Observing these instructions helps avoiding danger, reducing repair costs and downtimes and increasing the reliability and service life of the product. The operating instructions must be kept available at all times and have to be read and applied by every person who is assigned to work on or with the product.

These include amongst others:

- the operation and troubleshooting during operation
- the maintenance (care, maintenance, repair)
- the transport
- the assembly
- the disposal

Technical modifications and errors expected.

1.2 References to copyright and industrial property rights

These operating instructions are to be kept confidential and made accessible only to authorised persons. Disclosure to third parties is only permitted with the prior written consent of the manufacturer KEMPER GmbH.

All documents are protected under the Copyright Act. Any form of disclosure, reproduction, or partial use, as well as the communication of its content, is prohibited without express written permission.

Violations will be prosecuted under criminal law and will incur liability for any resulting damages.

Industrial property rights such as patents, trademarks, or designs are exclusively held by the manufacturer.

1.3 Notes for the operating company

The operating instructions are an essential part of the product.

The operating company must ensure that the operating personnel is aware of the contents of this manual.

Based on national regulations for accident prevention and environmental protection, the operating instructions are to be supplemented by the operating company's own operating instructions, including information on regulatory and reporting requirements to meet specific operating requirements, such as work organisation, work flow and staff employed. In

addition to the operating instructions and the relevant obligatory regulations for accident prevention applicable in the country of use, it is also imperative to comply with the recognised technical rules for safe and professional handling.

Without prior consent from the manufacturer, the operating company may not carry out any changes, conversions or additions to the product which may impair safety. Spare parts used must comply with the manufacturer's specified technical requirements. This is always the case with original replacement parts.

Only use trained and instructed staff for the operation, maintenance, repair and transport of the product. Clearly define for staff who is responsible for operation, maintenance and transport.

2 Safety

2.1 General information

The product is designed and built according to state-of-the-art technology and the recognised safety rules and regulations. When operating the product, technical hazards for the operator or impairment of the product as well as other property may occur, if:

- it is not operated by trained or instructed personnel
- it is not used for the purpose intended and/or
- it is improperly maintained

2.2 Information on signs and symbols

⚠ DANGER

This symbol in conjunction with the signal word "Danger" indicates imminent danger. Non-adherence of the safety note leads to death or serious injuries.

⚠ WARNING

The symbol in conjunction with the signal word "Warning" indicates a potentially dangerous situation. Non-adherence to the safety notice may lead to death or serious injuries.

⚠ CAUTION

The symbol in conjunction with the signal word "Caution" indicates a potentially dangerous situation. Non-adherence of the safety note may lead to slight or negligible injuries.

May also be used for warnings against property damage.

NOTE

The general information is simple additional information which does not warn about personal injury or property damage.

1. Enumerations of action steps are marked as numbers with a dot, where the order is important.
- Bullet points indicate lists of parts in a legend or instructions for which the sequence is unimportant

2.3 Markings/signs to be affixed by the operating company

The operating company is obliged to post further markings and signs on the product and the surrounding area if necessary.

Such markings and signs might be related, for example, to the requirement for wearing personal protective equipment.

2.4 Safety instructions for operating staff

Before use, the operator of the product must be instructed through information, instructions and training on the handling of the product and the materials and aids to be used.

The product system may only be used in technically perfect condition, for its intended purpose, in full awareness of the safety aspects and potential dangers and in accordance with these instructions. All errors, especially those that may affect safety, must be removed immediately.

Every person who is charged with commissioning, operation or maintenance must have fully read and understood these operating instructions. This specifically applies to staff who only operate the product occasionally.

The operating instructions must always be within reach of the product.

We accept no liability for any damages or injuries caused by failure to observe these operating instructions.

The relevant accident prevention regulations and other generally recognised safety and occupational health regulations must be observed.

The responsibilities for the various activities included in maintenance and repair must be clearly defined and adhered to. Only then will human error - especially in dangerous situations - be avoided.

The operating company is to enforce wearing of personal protective equipment by operating and maintenance staff. These include in particular safety shoes, safety glasses and gloves.

Do not wear loose, long hair, loose clothing or jewellery. In theory, there is a risk of getting caught on something, or being pulled in or dragged along by moving parts.

If there are any safety-related changes to the product, immediately halt the process, secure it and report the occurrence to the relevant authority/person!

Work on the product may only be carried out by reliable, trained staff. Observe the minimum legal age.

Staff who require training, teaching or instructing or staff who undergo a general apprenticeship may only operate the product under the supervision of an experienced member of staff.

2.5 Safety instructions for maintenance/troubleshooting

Service and maintenance doors must be freely accessible at all times.

Setting up, maintenance and repair work and troubleshooting must only be performed when the product is switched off.

Always tighten bolt connections that have been loosened during repair work. If specified, tighten the relevant bolts with a torque wrench.

In particular, protect connections and screw connections from dirt or care products at the beginning of maintenance/repair/care

The time frames for periodic testing/inspections stipulated or specified in the operating instructions must be observed.

Before disassembling, mark the parts that belong together.

2.6 Notes regarding special types of hazard

⚠ DANGER

Danger of electric shock!

Any work on the electrical equipment of the product must only be performed by a qualified electrician or by operating personnel under the direction and supervision of a qualified electrician in accordance with electronic regulations.

Before opening the product, pull the plug, if available, and secure it against accidental switch-on.

For faults with the product's electrical energy supply, immediately switch the product off at the on/off switch and if available, also pull the plug.

Use only original fuses with the prescribed amperage.

Electrical components, on which inspection, maintenance and repair work must be carried out, must be disconnected from the power supply. Secure equipment that has been used for disconnection against unintentional or automatic reconnection. Firstly check that no voltage is present in activated, electrical components, then isolate adjacent components under voltage. When making repairs, ensure that constructive characteristics are not altered in a way that reduces safety.

Check cables regularly for damage and replace if necessary.



CAUTION: Automatically Operated Device –
To Reduce The Risk Of Injury Disconnect From
Power Supply Before Servicing.

WARNING: To Reduce The Risk Of Electric Shock,
Do Not Expose to Water or Rain.

ATTENTION: Appareil fonctionnant automatiquement
– afin de réduire les risques de blessure, débrancher
l'alimentation électrique de procéder à l'entretien.

AVERTISSEMENT: Pour réduire le risque de choc
électrique, ne pas exposer à l'eau ou à la pluie.

⚠ WARNING

Electric shock if earthing is missing!

If the protective earth connection of devices is missing or incorrectly executed, high voltages may be present on exposed parts or housing parts which, if touched, can lead to serious injury or death.

⚠ WARNING

Electric shock if an unsuitable power supply is connected!

The connection of an unsuitable power supply can cause parts that can be touched to be under dangerous voltage. Contact with dangerous voltage can lead to serious or fatal injury.

For electrical connection data, see the name plate of the product

Power supply

The product is designed for the mains voltage indicated on the name plate. If mains cables or mains plugs are not fitted to the product, they must be fitted in accordance with national standards.

⚠ CAUTION

Insufficiently dimensioned electrical installation can lead to serious damage to property.

The mains supply line and its fuse protection must be designed in accordance with the existing power supply. Observe the technical data on the name plate.

The mains fuse should be equipped with at least a **category C** circuit breaker.

Note on connection to the mains supply for products with extraction capacity control

⚠ DANGER**Danger of electric voltage!**

Products with extraction power control (frequency inverters) are intended for protection by line protection fuses.

If the product is operated on a mains supply with a residual current circuit breaker (RCCB) connected upstream, the following must be observed.

Since the operation of the frequency inverter on the protective earth conductor can cause a direct current, the residual current circuit breaker (RCCB) connected in series with the mains must meet the following requirements.

Category type:	Rated current	Tripping fault current	Note
Type B	40 A	300 mA	short time-delayed
Type B	63 A	300 mA	short time-delayed
Type B	80 A	300 mA	short time-delayed
Type B	100 A	300 mA	short time-delayed
Type B	125 A	300 mA	short time-delayed

Tab. 1: Requirements for residual current circuit breaker

⚠ DANGER**Suspended loads**

Tipping or falling loads lead to severe to fatal injuries.

- Never step under suspended loads.
- Always remain outside the danger zone.
- Observe the total weight, attachment points and centre of gravity of the load.
- Observe the transport instructions and symbols on the transported goods.

⚠ WARNING**Health hazards caused by welding fume particles**

Do not inhale welding dust / smoke! Serious injury to the lungs and respiratory tract is possible!

Sweat smoke contains substances that can cause cancer!

Skin contact with cutting and welding fumes etc. can cause skin irritation in sensitive persons!

Repair and maintenance work on the product may only be carried out by trained and authorised personnel while complying with the safety rules and the applicable accident prevention regulations.

To avoid contact with and inhalation of the dust particles, wear disposable overalls, protective goggles, gloves and a suitable Class FFP2 respiratory protection filter mask in accordance with EN 149.

The release of hazardous dust particles during repair and maintenance is to be avoided to ensure that persons not charged with the task are not affected.

⚠ WARNING

Work on the compressed air vessel and on the compressed air lines and components may only be performed by persons with expertise in pneumatics.

The pneumatic system must be isolated and depressurised prior to the performance of maintenance and repair work on the external compressed air supply.

⚠ WARNING

Danger of burns or scalding!

The surfaces of the product can reach temperatures of more than 70 °C during operation.

Before maintenance and repair work, allow the product to cool down or wear heat-protective gloves.

⚠ CAUTION

Health hazard due to noise!

The product can produce noise, please refer to information in the technical data. In connection with other machines and/or local conditions, a higher noise level can occur at the operation site of the product. In this case, the operating company is obliged to provide the operating personnel with the appropriate protective equipment.

3 Product information

3.1 Functional description

The product is a high-vacuum filter system which is used to extract and filter contaminated air. It is a central extraction system to which several workstations/capture elements can be connected via a ducting system.

The captured pollutants are also transported to the product in the air stream via a ducting system. The polluted air flows past the baffle plates installed in the product. These protect the filter cartridges against coarser particles. The polluted air then passes through the filter medium.

The deposited particles collect on the surface of the filter cartridges and result in a slow increase in the pressure difference at the filter cartridges. This is assessed by the intelligent control system that initiates a cleaning process as required. A blast of compressed air is precisely distributed across the total filter surface of each filter cartridge via a rotating nozzle. The deposited particles are dislodged and fall into the dust collection container in the lower section of the product. The filter cartridges are cleaned during operation. Work does not need to be interrupted. So-called 'post-cleaning' is performed once the product has been switched off. This cleaning method is the more effective of the two.

The cleaned air flows up through the inside of the filter cartridges into the clean air area of the product from where it is either returned directly to the working space or routed outdoors via an exhaust pipe.

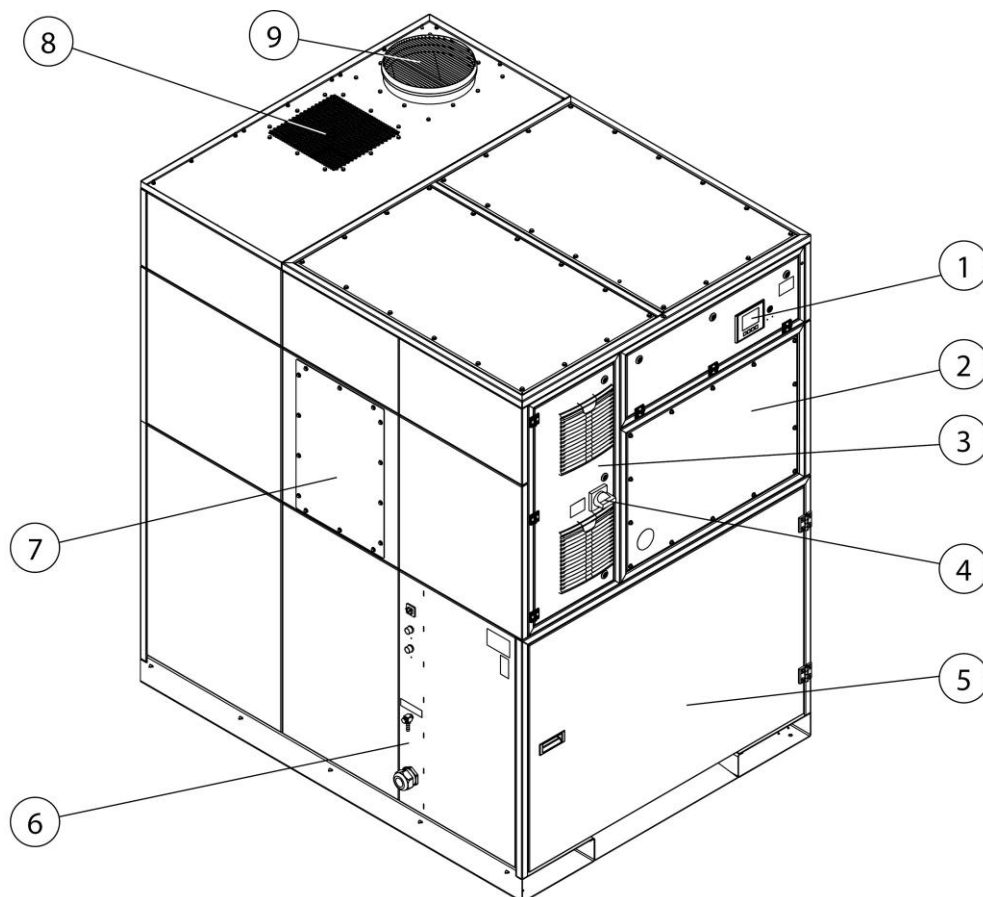


Fig. 1: Functional description - front view

Pos.	Description	Pos.	Description
1	Operating element (control display)	6	Connection panel
2	Maintenance cover, filter area	7	Dummy cover – duct connection for polluted air
3	Control cabinet, extraction capacity regulation	8	Duct connection for cooling air side channel blower
4	Main switch	9	Outlet opening for clean air
5	Maintenance door of dust collection container		

Tab. 2: Functional description - front view

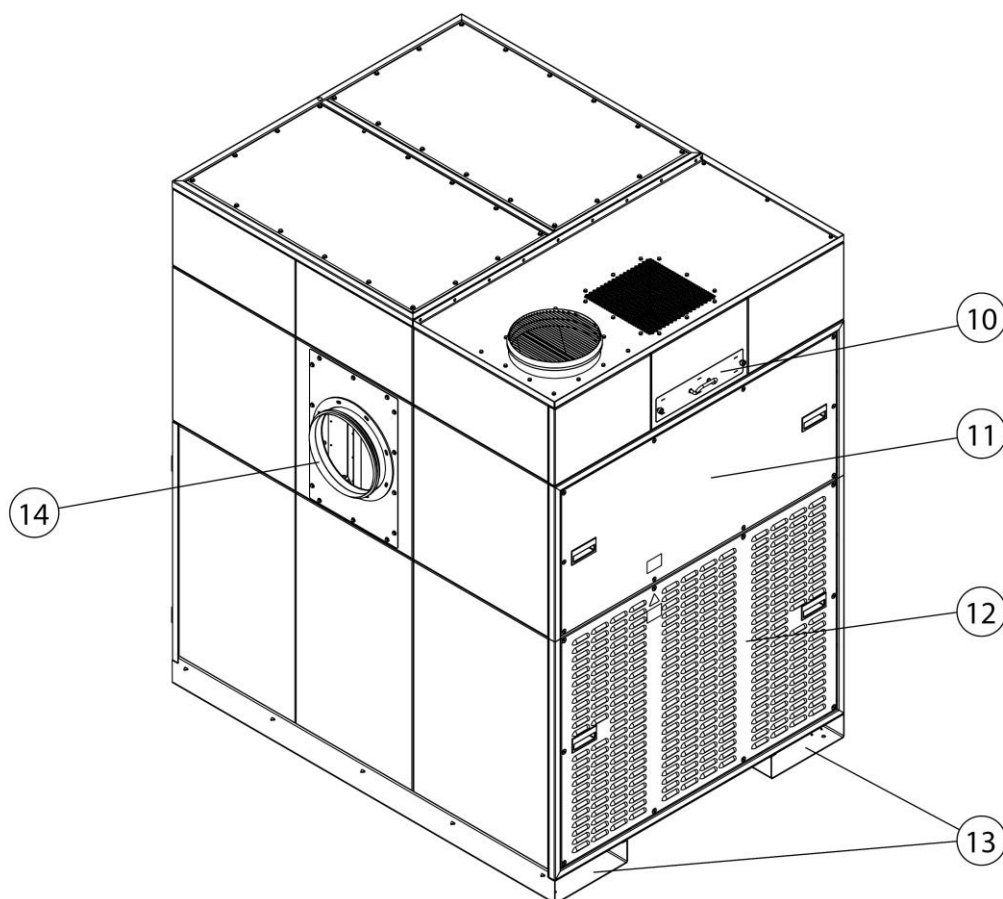


Fig. 2: Functional description - rear view

Pos.	Description	Pos.	Description
10	Maintenance door for cooling air filter mat	13	Forklift truck transport lugs
11	Maintenance cover for access to side channel blower, compressed air safety valve	14	Duct connection for polluted air (can be mounted on both sides)
12	Maintenance cover for side channel blower / cooling air outlet		

Tab. 3: Functional description - rear view

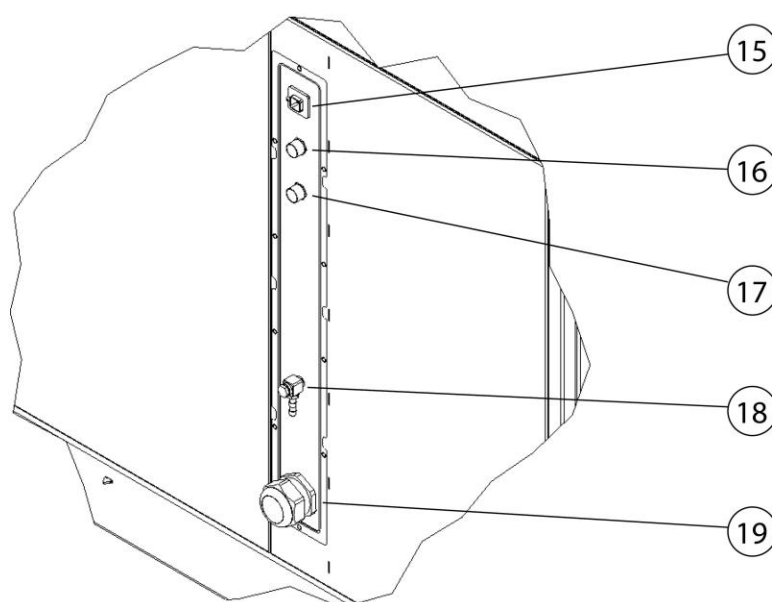


Fig. 3: Connection panel

Pos.	Description	Pos.	Description
15	Connection socket for external operating element	18	Compressed air connection NW 9 mm
16	6-pin connecting socket for optional extensions	19	Cable aperture/mains supply connection cable
17	12-pin connecting socket for optional extensions		

Tab. 4: Connection panel

3.2 Functional description of extraction capacity regulation (optional)

Products with automatic extraction capacity regulation are fitted with systems that keep the extraction capacity constant according to requirements. This is accomplished by fitting the product with an extraction capacity regulation system.

The product's automatic extraction capacity regulation has a range of advantages which make the extraction of dusts that are harmful to health more effective and, especially, more efficient.

Benefits:

- The product extraction capacity is always constant, regardless of how many workplaces are currently operating. It only ever extracts as much as is necessary. This means that employees always have the same working conditions and do not notice any differences resulting from a deteriorating extraction capacity due to higher volume of usage. The extraction capacity is always matched to the current demand.
- Extraction capacity is of course also regulated if new filter cartridges have been installed, for example. The flow resistance of new cartridges is significantly lower. The product, however, continues to operate with the same extraction capacity, but with lower consumption. As filter cartridge soiling levels increase the product's extraction capacity changes accordingly.

NOTE

The product must always be shut down completely before it can be restarted. The following message appears on the operating control during this run-down time:

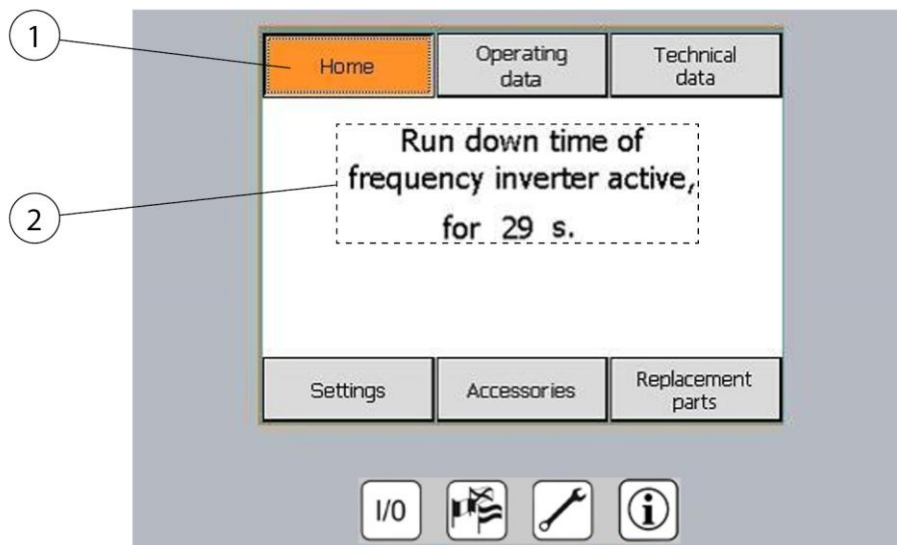


Fig. 4: Run-down time

Item	Description	Item	Description
1	Main menu	2	Message: Run-down time of the frequency converter (fan) active for 29 seconds

Tab. 5: Run-down time

3.3 Intended use

The product is designed to extract and filter out the welding fumes produced when welding metallic materials at the point of origin. In general, the product can be used for all work processes in which welding fumes are released. However, care must be taken that no glowing sparks are drawn into the product.

Dimensions and further product details that must be observed can be found in the technical data.

NOTE



Only products labelled with the W3 sticker have been tested and certified accordingly. See also chapter Technical data: Welding fume class and test standard.

NOTE

When welding alloyed or high-alloy steels with filler metals above 5% chromium/nickel, carcinogenic CMR substances (carcinogenic, mutagenic, reprotoxic) are released. In accordance with official regulations, only tested and approved products may be operated in Germany to extract these harmful smoke particles using the so-called recirculation method.

Only products that meet the requirements of welding fume separation class W3/IFA certified may be operated for the aforementioned welding processes using the recirculation method.

When extracting welding fumes with carcinogenic components (e.g. chromates, nickel oxides, etc.), the requirements of TRGS 560 (technical rules for HAZMAT) and TRGS 528 (welding work) must be obeyed.

NOTE

The information in the "Technical data" chapter must be observed and strictly adhered to.

Intended use also includes observation of the instructions and information on

- safety
- operation and control
- maintenance and servicing

contained in this manual.

Any other use or use going beyond this is considered improper use. The company operating the product is solely responsible for any damage resulting from it. This also applies to unauthorised modifications to the product.

3.4 Ambient conditions

Operation or storage of the device outside the specified area is deemed unintended use and may impair the function, the extraction capacity and the protective effect in accordance with DIN EN ISO 21904. The manufacturer is not liable for any resulting damage.

General:

- Ambient air free from dust, acids, corrosive gases or other aggressive substances.
- Height above sea level: up to 1000 m [3281 ft].
- For accordingly released products only: Indoor or outdoor operation permitted.

Temperature range of the ambient air:

Operating mode	Operation	Transport/ storage
Indoor (Indoor area)	+5 °C to 40 °C [+41 °F to +104 °F]	-20 °C to +50 °C [-4 °F to +122 °F]
Outdoor (For approved products only)	-10 °C to 40 °C [+14 °F to +104 °F]	-20 °C to +50 °C [-4 °F to +122 °F]

Table 6: Temperature range of the ambient air

Relative humidity (non-condensing unless approved otherwise):

- **Indoor:** up to 50% at +40 °C [+104 °F], up to 90% at +20 °C [+68 °F]
- **Outdoor:** up to 100%, including temporary condensation due to weather conditions

3.5 General requirements in accordance with DIN EN ISO 21904

NOTE

Connection of ducting systems, extraction arms and hoses.

Ducting systems, extraction arms and hoses connected to the product can lead to a pressure drop and must be taken into account by the system designer or user.

The connected components must be suitable for the product and ensure the required minimum volume flow (extraction capacity).

A possible design of the ducting can be requested from the manufacturer.

The connected components must be checked regularly for proper seating, leaks and blockages.

The required extraction capacity must be checked at the central extraction element.

NOTE

Returning the air to the workplace atmosphere

In some Federal States, recirculation of air into the workplace atmosphere is not recommended or is prohibited. It may be necessary to conduct the exhaust air to the outside via a duct.

3.6 Setting up the product outdoors

The product is not suitable for installation outdoors.

If the product is to be installed outdoors, then a suitable weatherproof enclosure must be provided on site.

The enclosure must meet the following minimum requirements (see installation examples) for installation, maintenance and repair work.

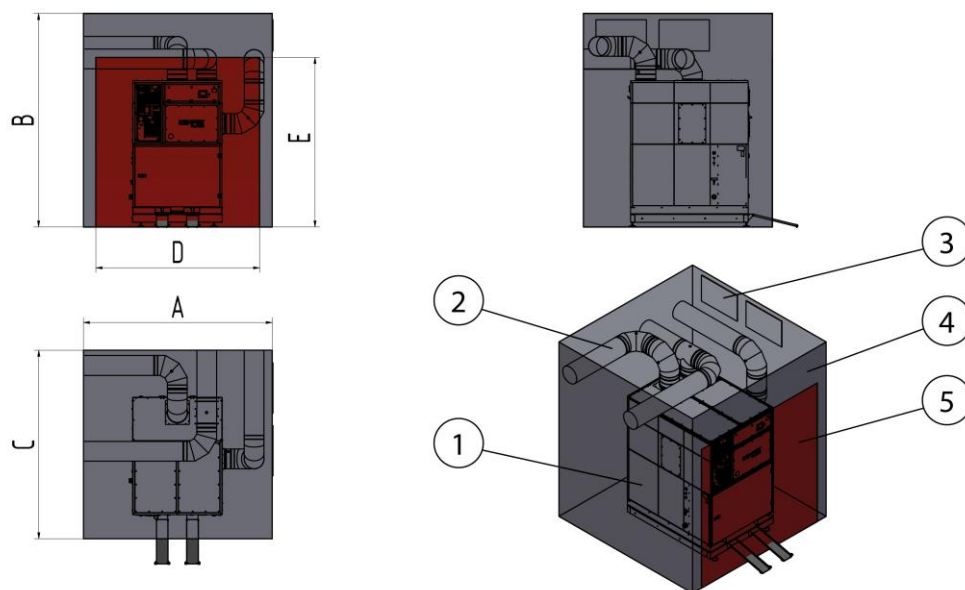


Fig. 5: Enclosure – example variant 1

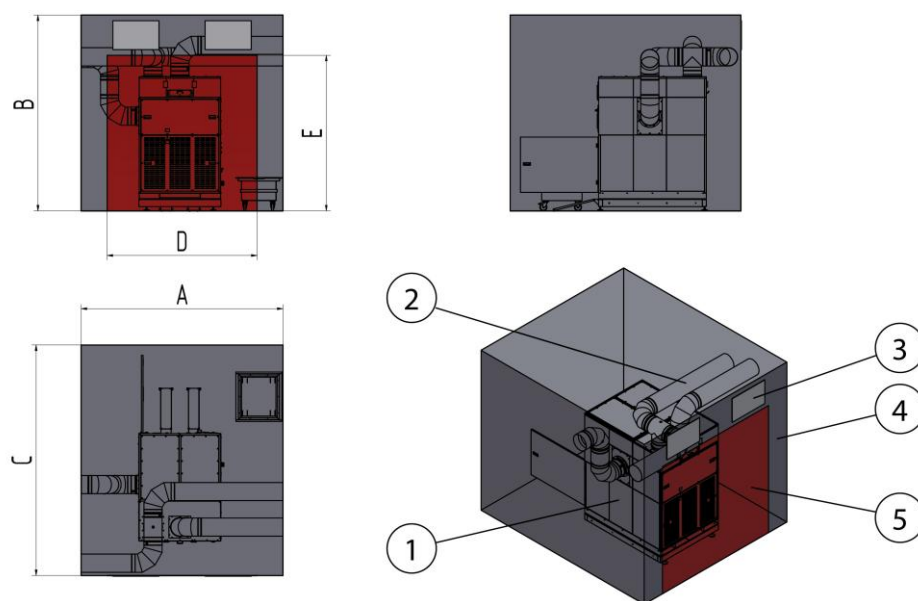


Fig. 6: Enclosure – example variant 2

Item	Description	Item	Description
1	Product	4	Enclosure
2	Ducting system	5	Gate
3	Vent		

Tab. 7: Enclosure – variant 1

Dimensions

Symbol	A (mm)	B (mm)	C (mm)	D (mm)	E (mm)
Description	Height	Width	Depth	Gate width	Gate height
Variant 1	3000	3400	3000	2600	2700
Variant 2	3500	3400	4000	2600	2700

Tab. 8: Dimensions

ATTENTION

Information on the enclosure

The information provided here is an example of an installation with minimum dimensions.

For the required cooling air supply, it is necessary to provide vents with bird and insect protection (size 800 x 500/600 mm). At least 3000 m³/h exhaust air extraction capacity with maximum pressure loss 10–20 Pa.

3.7 Reasonably foreseeable misuse

No reasonable, foreseeable misuse is possible that could lead to dangerous situations with personal injury when working with the product whilst adhering to its intended use.

The operation of the product in industrial areas that do not comply with the requirements for explosion protection is not permissible.

Furthermore, the operation is prohibited for:

1. Processes that are not in the intended use list and in which the extracted air is:
 - is mixed with sparks, e.g. from grinding processes, which due to their size and quantity might lead to damage to the filter media or even to a fire;
 - mixed with liquids and the resulting contamination of the air flow with vapours containing aerosols and oils;
 - mixed with highly flammable, combustible dust and/or with substances that can form explosive mixtures or atmospheres;
 - is mixed with other aggressive or abrasive dust that could damage the product and the filter elements employed;
 - is mixed with organic, toxic substances or a proportion of substances that are released when cutting the material.

2. Outdoor locations where the product is exposed to weather conditions because the product must only be installed in closed buildings.
If there is an outdoor variant of the product available, this may be installed outside. Please note that additional accessories may be required for the outdoor installation.

3.8 Instructions for protection against damage

The product is designed for continuous use. However, improper use may result in damage to the product.

⚠ WARNING

Danger of material damage!

Do not suck in any liquids or foreign bodies!

Do not close the suction and pressure sides permanently; this will cause the product to overheat due to the lack of air flow.

In the event of overheating, the product will switch off or go into emergency mode. The required extraction capacity is then no longer available.

3.9 Markings and signs on the product

Various markings and signs are affixed to the product. If these are damaged or removed, please replace them immediately with new ones in the same location.

The operating company is obliged to post further markings and signs on the product and the surrounding area if necessary.

Such notes and signs might be related, for example, to the requirement for wearing personal protective equipment.

In the country of use, additional required safety instructions and pictograms can be provided by the manufacturer in accordance with applicable law.

3.10 Residual Risk

Even when all safety rules are observed, when operating the product a residual risk remains, as described below.

All persons working on and with the product must be aware of these residual risks and follow the instructions that prevent these residual risks from causing accidents or damages.

⚠ WARNING

Danger of serious injury to the lungs and respiratory tract – always wear respiratory protection, Class FFP2 or higher.

Skin contact with welding fume particles may cause skin irritation in sensitive persons – wear protective clothing.

Before starting the welding process, ensure that the product is properly adjusted and in operation. The filter elements must be complete and in undamaged condition.

The connected detection element must reliably detect the welding fumes. For the correct positioning, refer to the documentation of the detection element.

When changing the filter inserts, skin contact with the separated dust particles may occur and parts of the dust particles may also be stirred up by the work. Respiratory protection and protective clothing must be worn.

Embers in the filter elements may cause smouldering fires – switch off the product, close the damper flap in the collection element if fitted and let the device cool down in a controlled manner.

4 Transport and Storage

4.1 Transport

⚠ DANGER

Life-threatening crushing possible when loading and transporting the product!

Improper lifting and transporting may cause the pallet (if present) to tilt and fall!

- Never stand under suspended loads.
- Observe the permissible loads of the transport and lifting aids.
- Observe the applicable accident prevention and occupational safety regulations.

For transporting products with a pallet, use a suitable pallet truck or forklift. The weight of the product can be found on the name plate.

4.2 Storage

The product must be stored in its original packaging at an ambient temperature of 20 °C to +50 °C in a dry and clean place. The packaging must not be loaded by other objects.

The storage duration is not critical for all products.

5 Assembly

Instructions for safe installation of the product

NOTE

The operating company of the product may only assign specialists to carry out independent assembly.

- At least two people are needed to assemble the product.
 - Only use suitable transport and lifting equipment.
 - It must be ensured that the assembly location provides sufficient load-bearing capacity.
 - Only use suitable fixing material.
 - The fixing material must be selected according to the local conditions.
 - The product must not obstruct anyone in their working area.
 - Existing air outlet grilles must not be covered.
 - Existing maintenance doors and covers must be freely accessible.
-

⚠ DANGER

Falling parts may cause life-threatening injuries!

Tipping or falling loads lead to severe to fatal injuries.

- Never step under suspended loads.
 - Always remain outside the danger zone.
 - Observe the total weight, attachment points and centre of gravity of the load.
 - Observe the transport instructions and symbols on the transported goods.
-

⚠ WARNING

Incorrect connections may cause serious injuries!

Please note the necessary safeguards and only have the product connected by trained specialists.

5.1 Unpacking and assembling the product

The product is delivered fully assembled on a pallet.

To mount the product, proceed as follows:

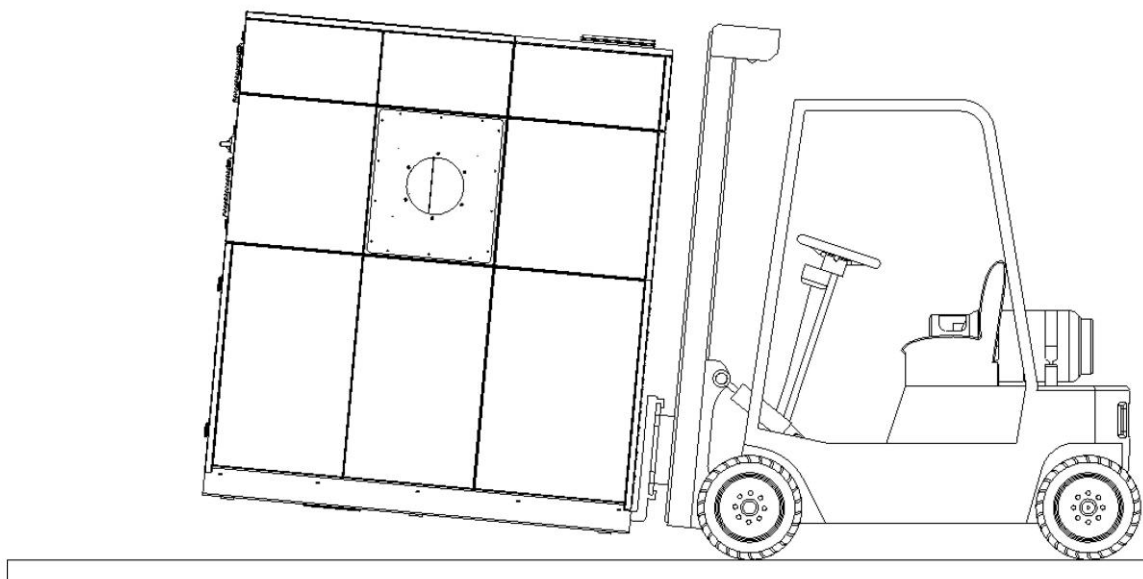


Fig. 7: Transporting the product

1. Position the product at the installation site using a suitable forklift truck. The floor of the installation site must be level and permanently load-bearing in accordance with the product weight.

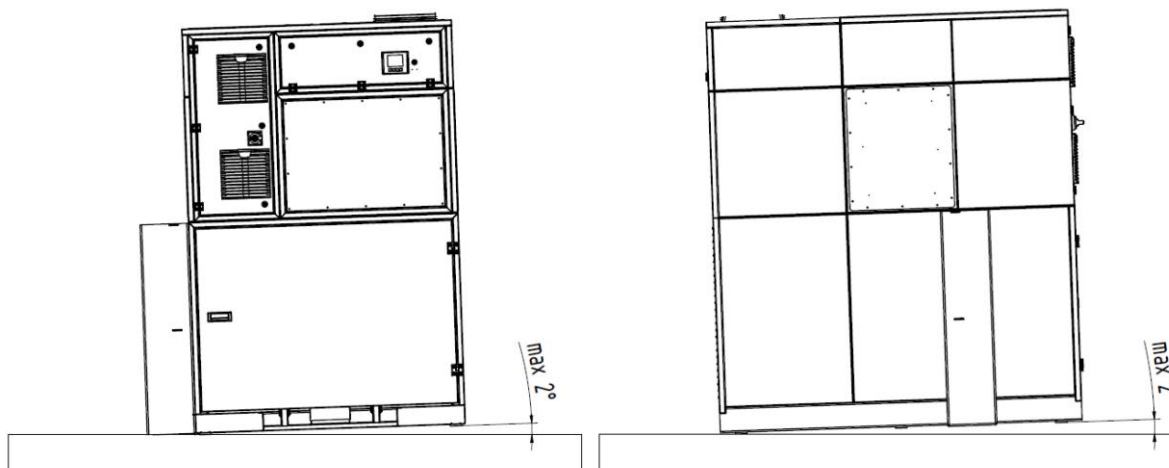


Fig. 8: Positioning the product

2. Remove the packaging film and the tensioning straps.
3. Remove the product's pallet by driving the forklift truck into the product's forklift pockets, lifting the product a few centimetres and removing the pallet.

4. Then align the product at the place of use. It is not necessary to fix it to the floor.

Inserting the insert grid in the dust chute

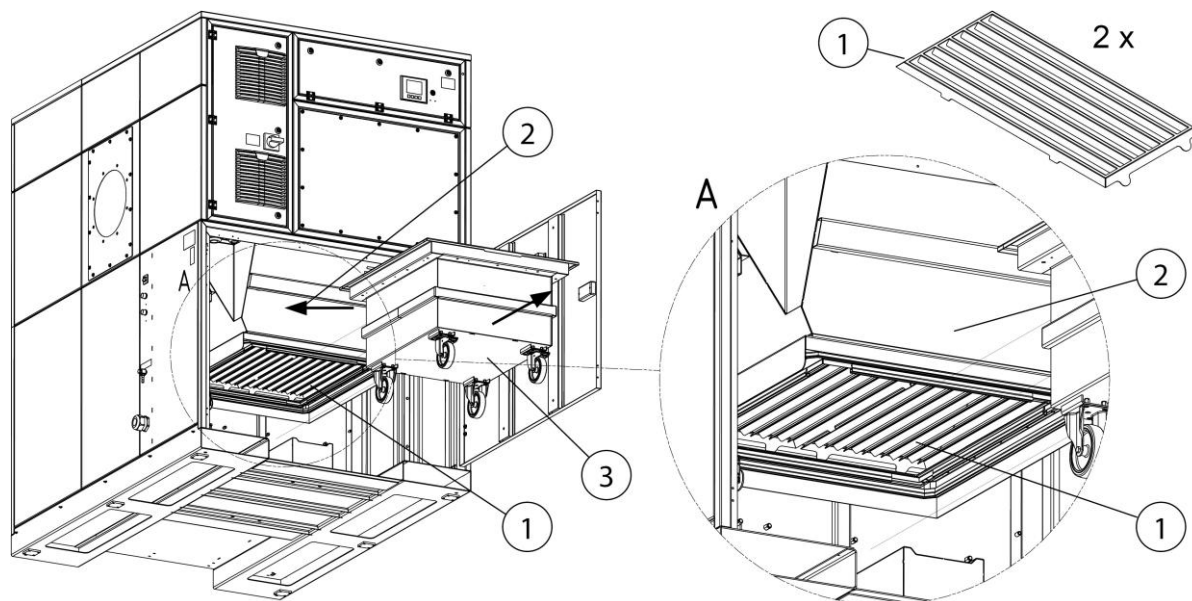


Fig. 9: Inserting the insert grid

Pos.	Description	Pos.	Description
1	Insert grid	3	Dust collection trolley
2	Dust chute		

Tab. 9: Inserting the insert grid

If necessary, the two insert grids must be inserted into the dust chute:

1. Open the maintenance door, lower the dust collection trolley (Pos. 3) and pull it out of the product.
2. Insert the two insert grids (Pos. 1) slightly inclined into the dust chute (Pos. 2).

5.2 Connecting the product

NOTE

If add-on products are also present, follow the appropriate manuals when assembling them.

Connecting the ducting system

ATTENTION

The product produces a high-vacuum.

The connected ducting system must be appropriately designed for the maximum vacuum generated. See also chapter "Technical data".

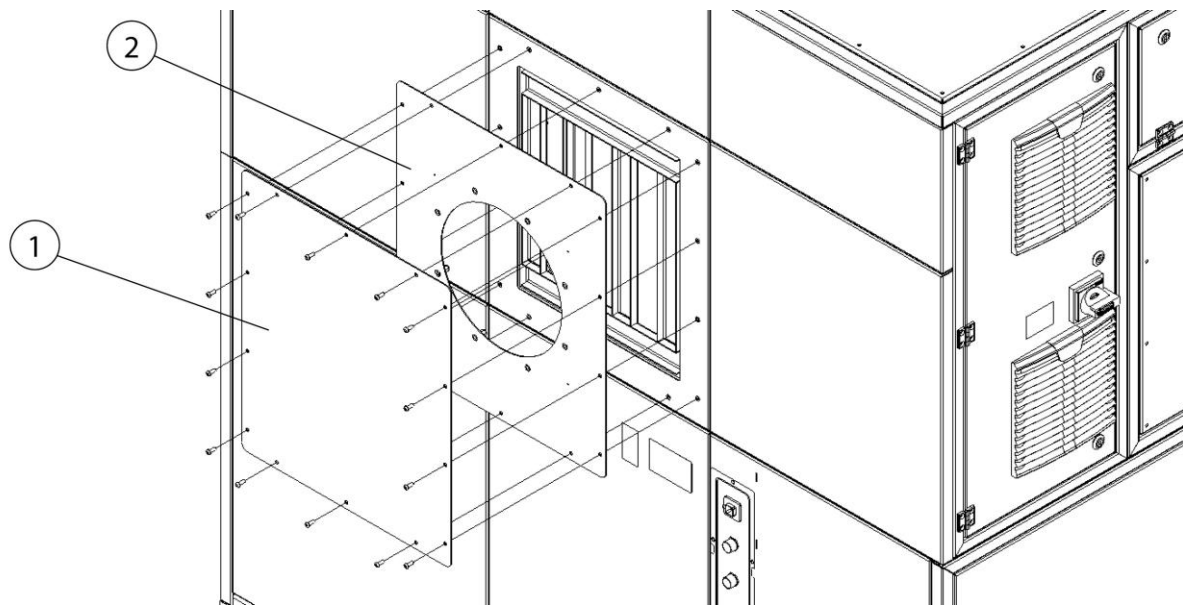


Fig. 10: Connecting the ducting system

Pos.	Description	Pos.	Description
1	Dummy cover panel	2	Flange connection panel

Tab. 10: Positions on the product

The on-site ducting system is connected via a flange connection in accordance with DIN 24154.

The flange connection panel (Pos. 2) can be mounted either on the right hand or left-hand side of the product.

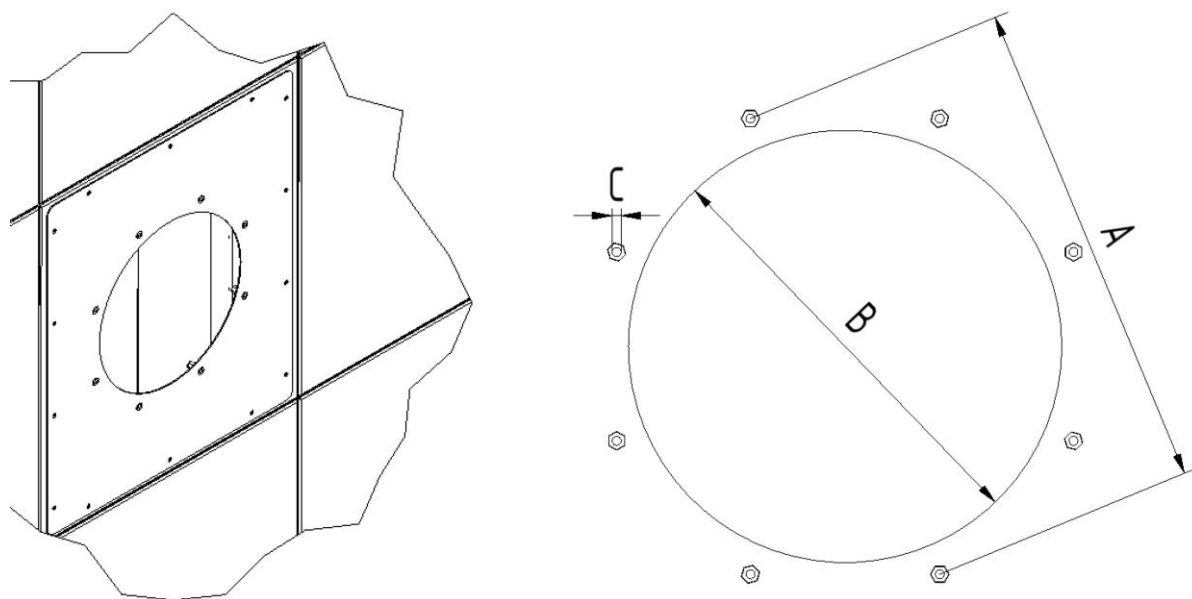


Fig. 11: Dimensions sheet – connection of the ducting system

Pos.	Description	Pos.	Description
A	356 mm	C	M8 rivet nut
B	312 mm (duct NW 315)		

Tab. 11: Dimensions

Connecting to the compressed air supply

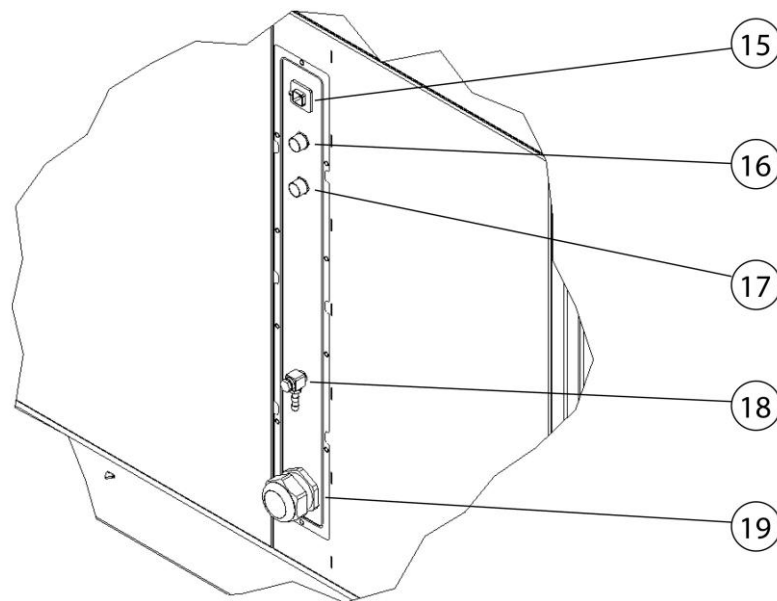


Fig. 12: Connecting the product

No.	Description	No.	Description
15	Connection socket for external operating element	18	Connecting sleeve for 9 mm compressed air supply
16	6-pin connecting socket for optional extensions	19	Mains supply connection cable, cable gland
17	12-pin connecting socket for optional extensions		

Tab. 12: Connecting the product

Connect the power cable to the on-site air compressed air network. To do this:

1. Push a suitable compressed air hose with an inner diameter of 9 mm onto the grommet (Pos. 18) and fix it in place with a suitable band clamp.
2. Connect the compressed air hose to the on-site compressed air network.

NOTE

The compressed air supply connected to the product must provide Class 2:4:2 compressed air in accordance with ISO 8573-1 at a pressure of 5–6 bar.

The hose, band clamp and compressed air maintenance unit are not included in the scope of supply.

5.3 Mounting the cooling air connecting piece (optional)

The optionally available connection piece is used to connect a pipe for supplying cooling air.

The connecting price is mounted as follows:

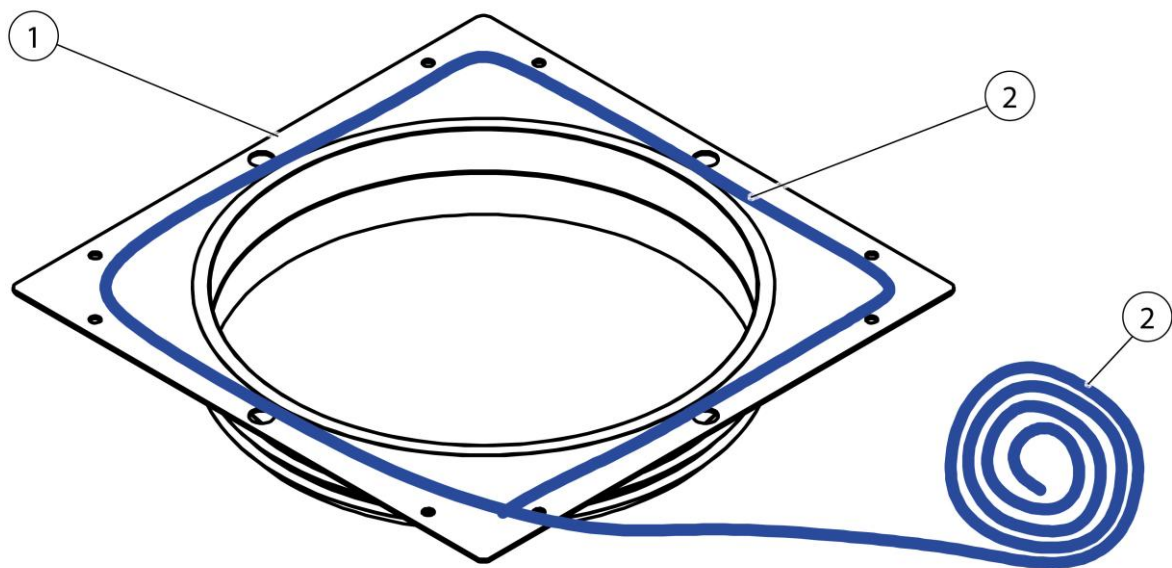


Fig. 13: Mounting – Sticking sealing tape on the connecting piece

Pos.	Description	Pos.	Description
1	Connecting piece	2	Sealing tape – For sticking on

Tab. 13: Mounting – Sticking sealing tape on the connecting piece

1. As shown in the figure, apply the enclosed sealing tape (Pos. 2) to the flange surfaces of the connecting piece (Pos. 1).

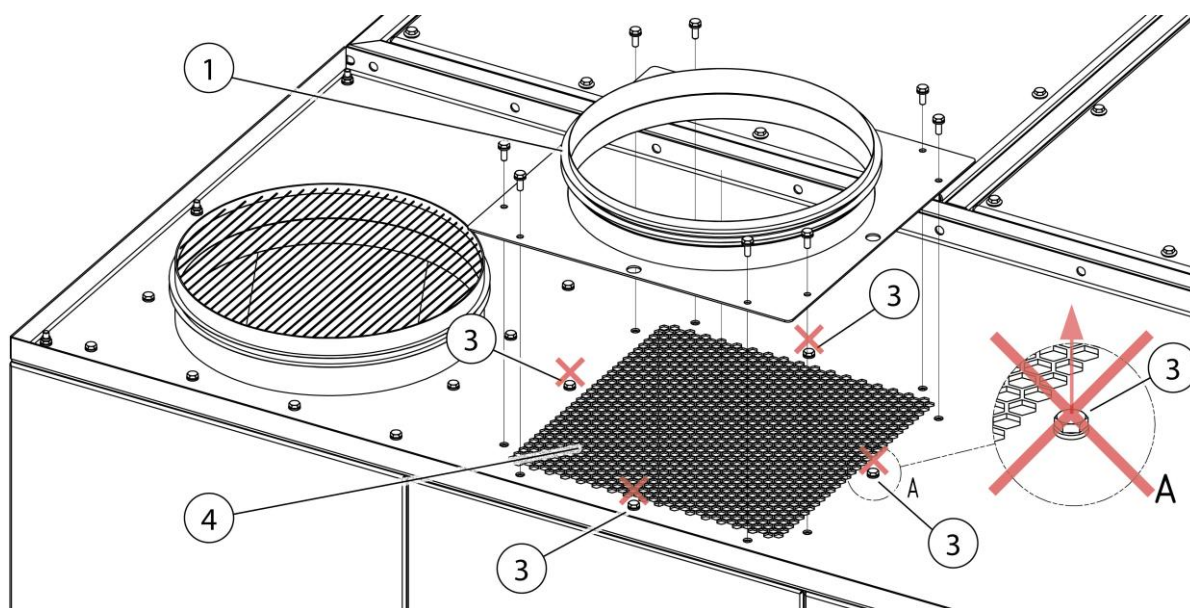


Fig. 14: Mounting – Connecting piece on the product

Pos.	Description	Pos.	Description
3	Fixing bolts – Cooling air fan	4	Intake grille

Tab. 14: Mounting – Connecting piece on the product

ATTENTION

Do not remove the fixing bolts (Pos. 3)!

2. As shown in the figure, remove the other fixing bolts around the intake grille, making sure not to remove the bolts shown in Pos. 3.
3. Fasten the connecting piece (Pos. 1) to the product using the previously removed bolts.

5.4 Wiring diagram

5.4.1 General information on the wiring diagram

NOTE

Mains supply connection

On site, ensure the correct pre-fusing and the correct cable cross-section of the mains supply connection cable.

Rated current: See name plate/data sheet

Rated current	Back-up fuse
35-45 A	Circuit breaker 3x50 A category C
45-55 A	Circuit breaker 3x63 A category C
55-70 A	Circuit breaker 3x80 A category C
70-85 A	Circuit breaker 3x100 A category C

Tab. 15: Selecting the pre-fusing

Selection of the mains supply connection cable

Rated current	Mains supply connection cable	Rated current	Mains supply connection cable
35-45 A	5 x 16 mm ²	55-70 A	4 x 35 mm ²
45-55 A	4 x 25 mm ²	70-85 A	4 x 50 mm ²

Tab. 16: Selection of the mains supply connection cable

NOTE

Rated current: See name plate/data sheet.

Dimensioning: Mains supply connection cable up to a maximum cable length of 50 metres.

5.4.2 Cable routing and connection

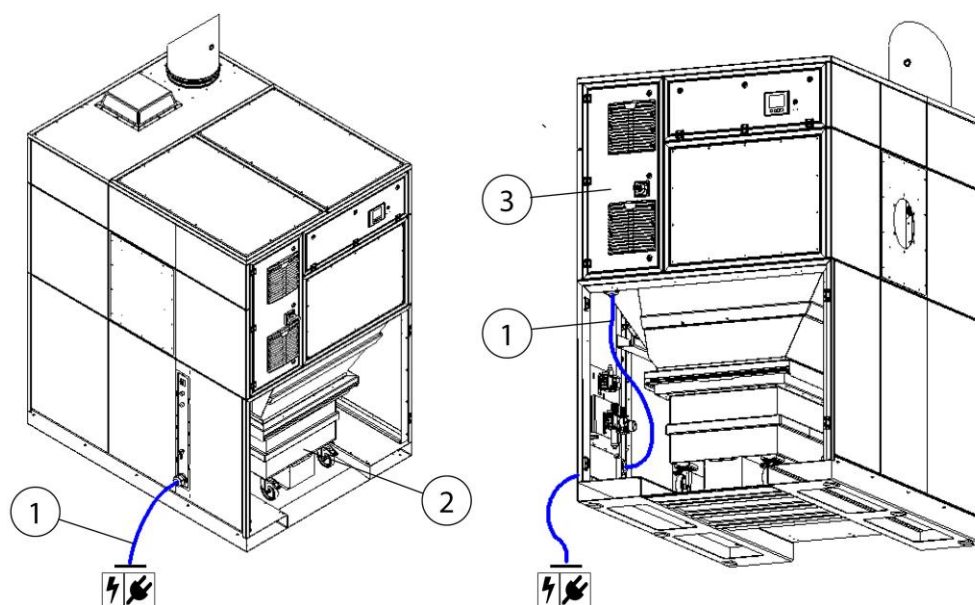


Fig. 15: Routing the mains supply connection cable

Pos.	Description	Pos.	Description
1	Mains supply connection cable	3	Control cabinet, extraction capacity regulation
2	Dust collection container		

Tab. 17: Positions on the product

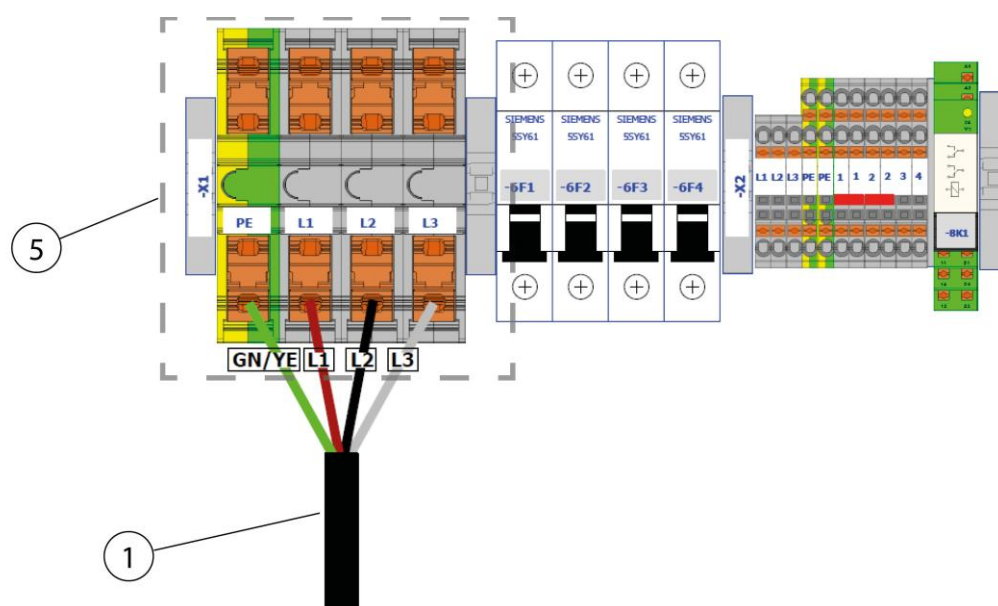


Fig. 16: Connecting the mains supply connection cable

Pos.	Description	Pos.	Description
1	Mains supply connection cable	5	Terminal strip - control cabinet

Tab. 18: Connecting the mains supply connection cable

Connect as follows:

1. Route the mains supply cable (Pos. 1) through the cable guides provided to the terminal strip in the control cabinet (Pos. 5).
2. Connect the mains supply cable (Pos. 1) to the terminal strip in the control cabinet (Pos. 5) as shown in the diagram.

ATTENTION

When connecting the cable wires, pay attention to the clockwise field of rotation!

5.4.3 Product with extraction capacity regulation

Note on connection to the mains supply for products with extraction capacity control.

⚠ DANGER

Danger of electric voltage!

Products with extraction power control (frequency inverters) are intended for protection by line protection fuses.

If the product is operated on a mains supply with a residual current circuit breaker (RCCB) connected upstream, the following must be observed.

Since the operation of the frequency inverter on the protective earth conductor can cause a direct current, the residual current circuit breaker (RCCB) connected in series with the mains must meet the following requirements.

Category type:	Rated current	Tripping fault current	Note
B	40–125 A	300 mA	short time-delayed

Tab. 19: Requirements for residual current circuit breaker

6 Use

Every person who deals with use, maintenance and repair of the product must have thoroughly read these operating instructions as well as the instructions for any attachment and accessory products and have understood them.

6.1 Qualification of the operating personnel

The operating company of the product may only commission persons to use the product independently if they are well-versed in this task.

Those familiar with this task includes those who have been instructed appropriately in the task and know the operating instructions as well as the operational issues in question.

The product should only be used by trained or instructed personnel. This is the only way to ensure safety and hazard awareness of all personnel during work.

6.2 Operating elements

The product is equipped with a main switch and a control display.

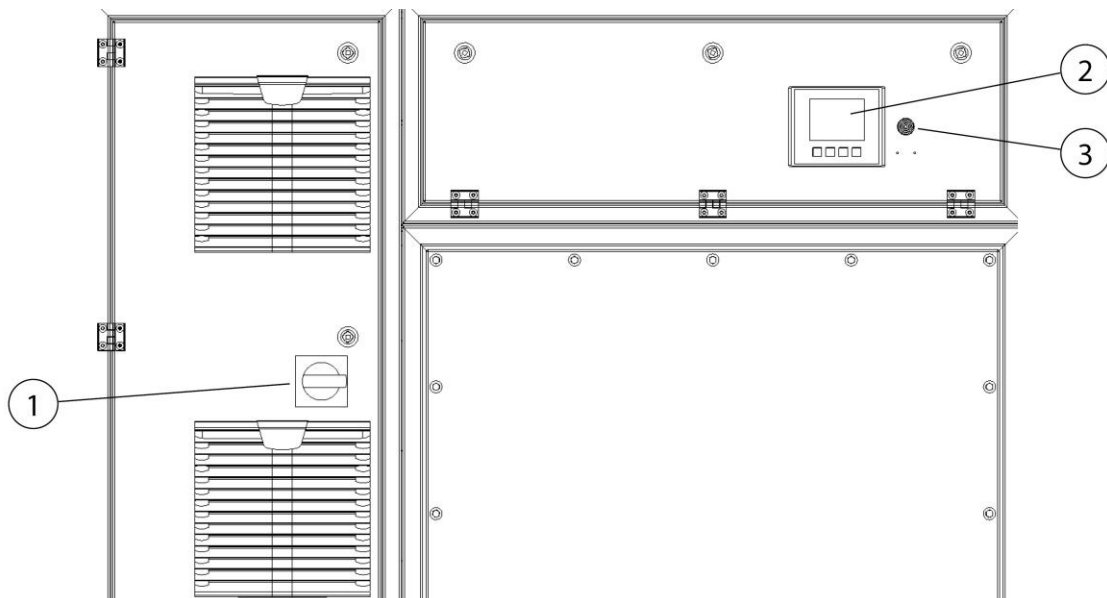
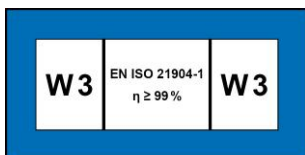


Fig. 17: Operating elements

Pos.	Description	Function
1	Main switch	Disconnects the power supply completely from the mains
2	Control display - suction power control	Various options and parameters can be set via the control display (touch screen).
3	Signal horn	

Tab. 20: Operating control

NOTE



Alarm horn (Pos. 3)

Reliable capture of welding fumes is only possible with sufficient extraction capacity. As the dust load on the filter increases, the flow resistance rises and the extraction capacity decreases. As soon as it drops below a minimum value, the signal horn sounds. If the integrated cleaning is no longer sufficient, a filter change is required. The same happens if the extraction capacity is reduced too much by closing the extraction hose. A remedy is to check for blockages.

6.3 Operating control and monitoring technology

6.3.1 Main menu – Switching the product on/off

The product is fitted with a 4.3" colour touchscreen or a 5.7" colour touchscreen. The interface is operated by tapping the display or by pressing one of the four keys below the display.

The operating interface is set up as follows:

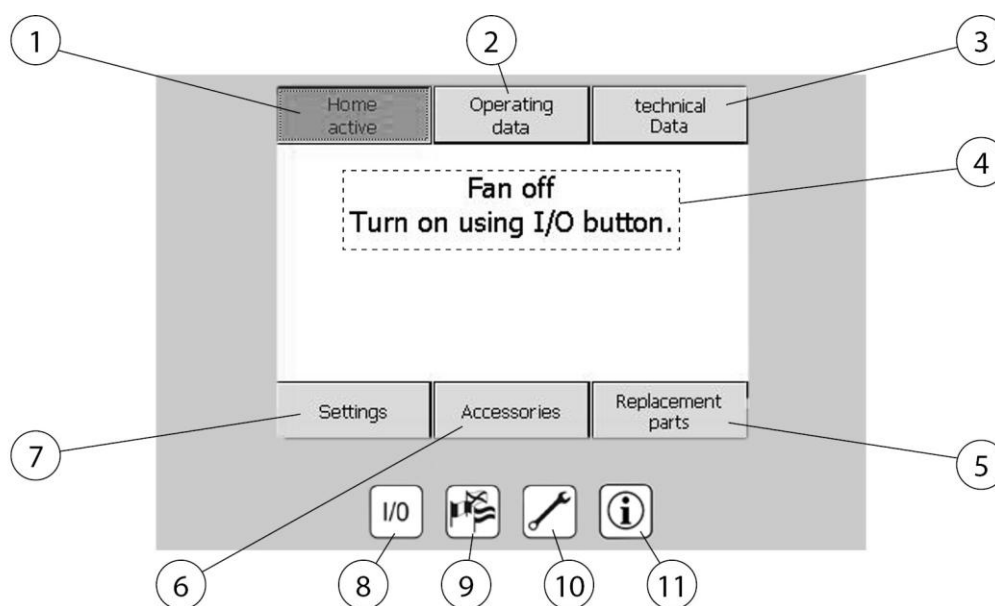


Fig. 18: Operating elements

Item	Description	Function
1	Main menu	Returns to main screen
2	Operating data menu	Overview of current operating parameters
3	Technical data menu	Information on product and software
4	Status information	Messages concerning the product
5	Spare parts menu	Information on available spare parts
6	Accessories menu	Information on optional accessories
7	Settings menu	Modification of operating parameters
8	On/Off button	Switches the product on or off
9	Language selection button	Menu for selecting the language
10	Maintenance menu button	Shows information on maintenance
11	Manufacturer information button	Shows information about the manufacturer

Tab. 21: Operating elements

The main menu indicates whether the product is switched on or off and whether filter cartridges are currently being cleaned. This display appears after approx. 30 seconds after the product has been switched on at the

main switch. If the user interface is not activated for two minutes, the user interface automatically returns to this menu.

I/O switch (Pos. 8)

Switches product on and off.

NOTE

The product should not be switched off at the main switch or by removing the mains plug even for longer work breaks or at the weekend because filter cleaning is carried out even when the device is at a standstill.

6.3.2 Operating data queries

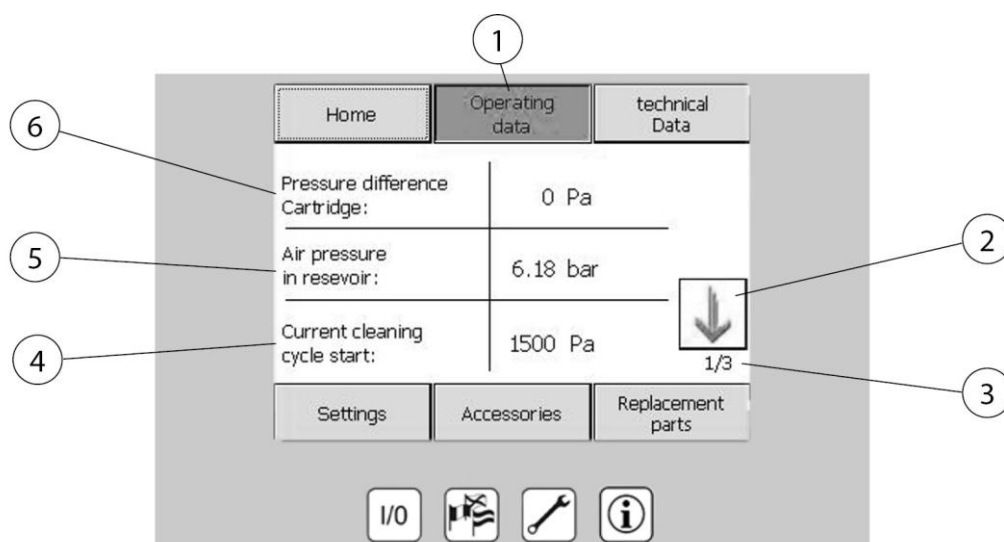


Fig. 19: Operating data

Item	Description	Item	Description
1	Operating data menu	4	Current pressure difference for cleaning start
2	Arrow keys for changing the pages	5	Current pressure in the compressed air vessel
3	Page 1 of 3	6	Filter cartridge pressure difference (saturation)

Tab. 22: Operating data

Displays current device data and measured product values.

6.3.3 Technical data queries

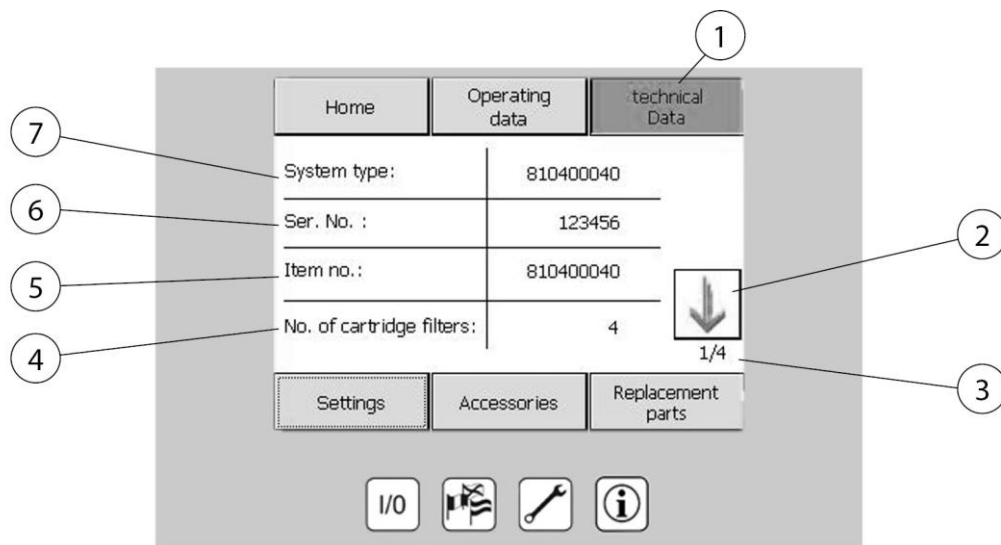


Fig. 20: Technical data

Item	Description	Item	Description
1	Technical data menu	5	Product item number
2	Arrow keys for changing the pages	6	Machine number
3	Page 1 of 4	7	System type
4	Number of installed filter cartridges		

Tab. 23: Technical data

Pos. 1 Display of the product technical data.

NOTE

In the event of a service request or a fault, this menu displays all system data required by our employees to identify the product correctly.

6.3.4 Technical settings

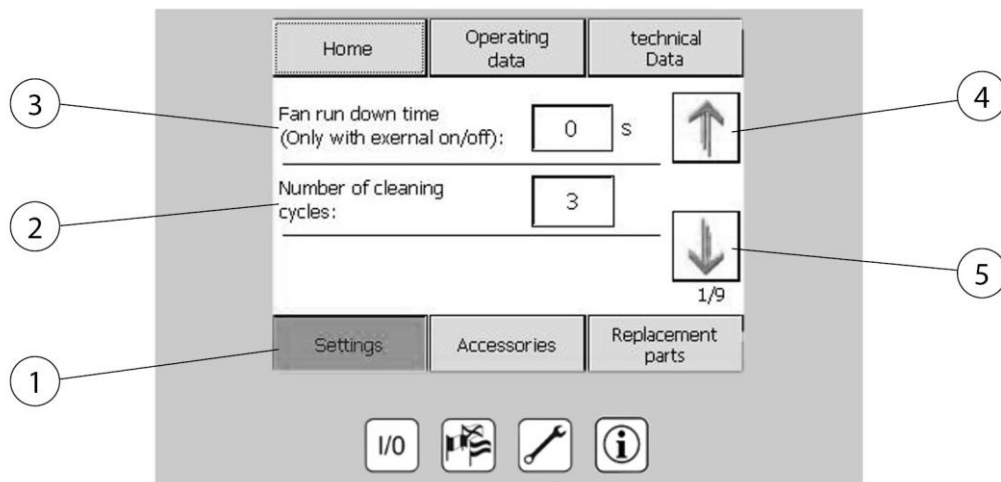


Fig. 21: Technical settings

Item	Description	Item	Description
1	Settings menu	4	Arrow key for changing the page
2	Number of filter cleaning session in standstill	5	Arrow key for changing the page
3	Fan run-on time (with external on/off only)		

Tab. 24: Technical settings

- Settings (Pos. 1)**

Display and setting of the operating parameters.

6.3.5 Accessories queries

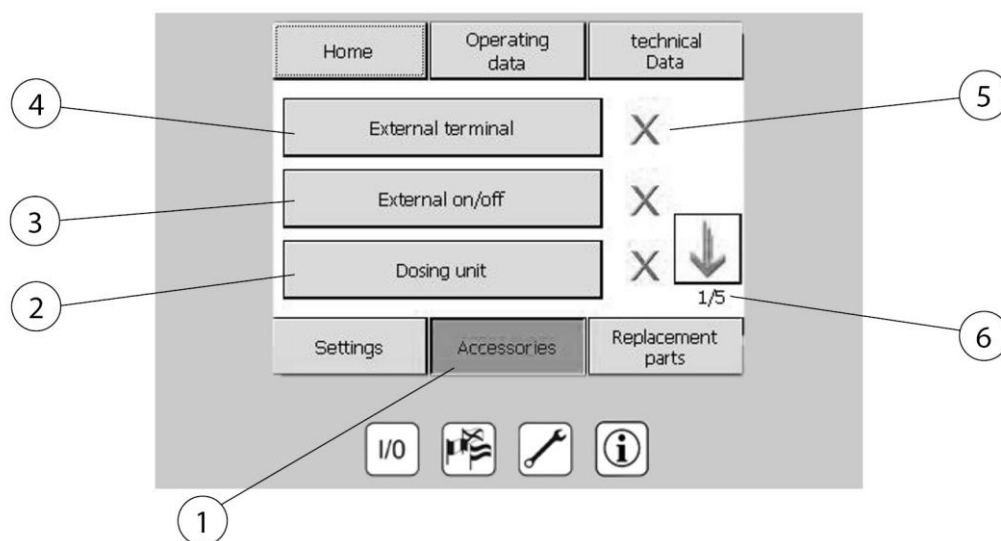


Fig. 22: Accessories

Item	Description	Item	Description
1	Accessories menu	4	Page 1 of 5
2	Dosing device for filter aid	5	X = accessory not available ✓ = accessory available
3	Fan on/off via external switching point	6	Page 1 of 5

Tab. 25: Accessories

Information about installed or optionally available accessories for the product.

NOTE

Information on the installation, configuration and operation of optional accessories can be found in the enclosed operating manuals.

An information screen for any optionally available accessory components can be opened by pressing the relevant button.

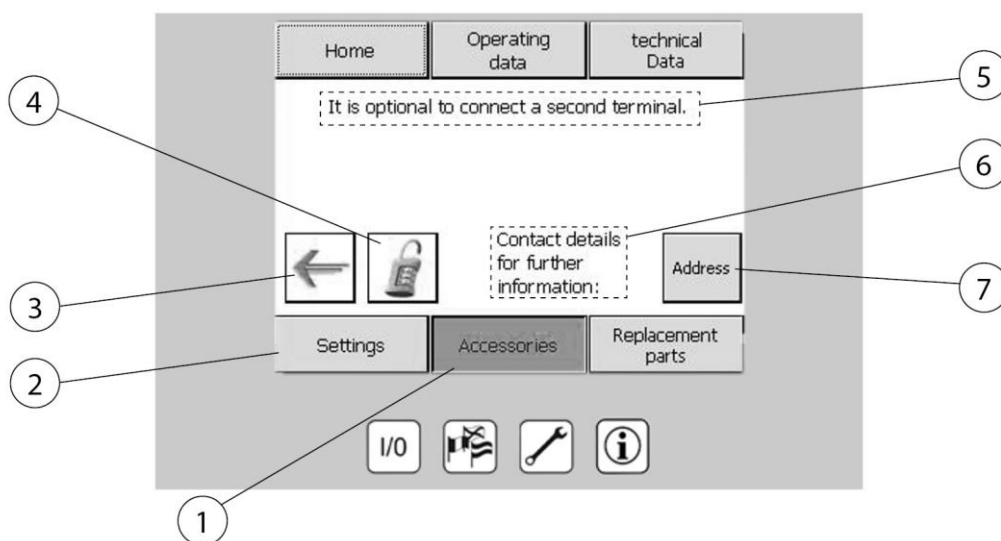


Fig. 23: Accessories contact data

Item	Description	Item	Description
1	Accessories menu	5	Note: Second operating terminal is connected (optional)
2	Settings	6	Contact data for further information
3	Arrow key: Page back	7	Query manufacturer's contact data
4	Entry of release code for purchased components		

Tab. 26: Accessories contact data

6.3.6 Spare parts queries

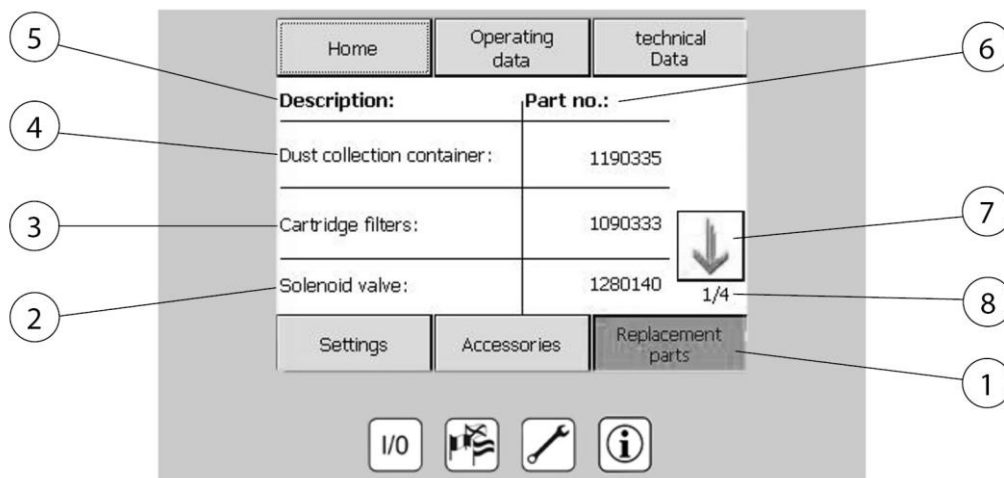


Fig. 24: Spare parts queries

Item	Description	Item	Description
1	Spare parts menu	5	Description
2	Solenoid valve	6	Item no.
3	Filter cartridge	7	Arrow key for changing the page
4	Disposal container	8	Page 1 of 4

Tab. 27: Spare parts queries

Spare parts menu (Pos. 1)

Necessary spare parts numbers can be queried via the spare parts menu.

6.3.7 Language selection menu

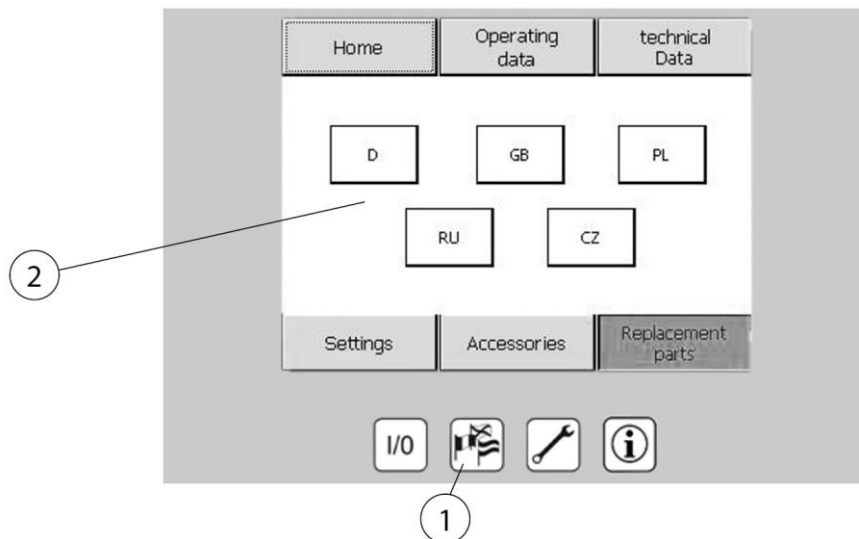


Fig. 25: Language selection

Item	Description	Item	Description
1	Language selection button	2	Selectable languages

Tab. 28: Language selection

Language selection button (Pos. 1)

Choice of display language. The available languages are represented by the national flags.

6.3.8 Maintenance menu

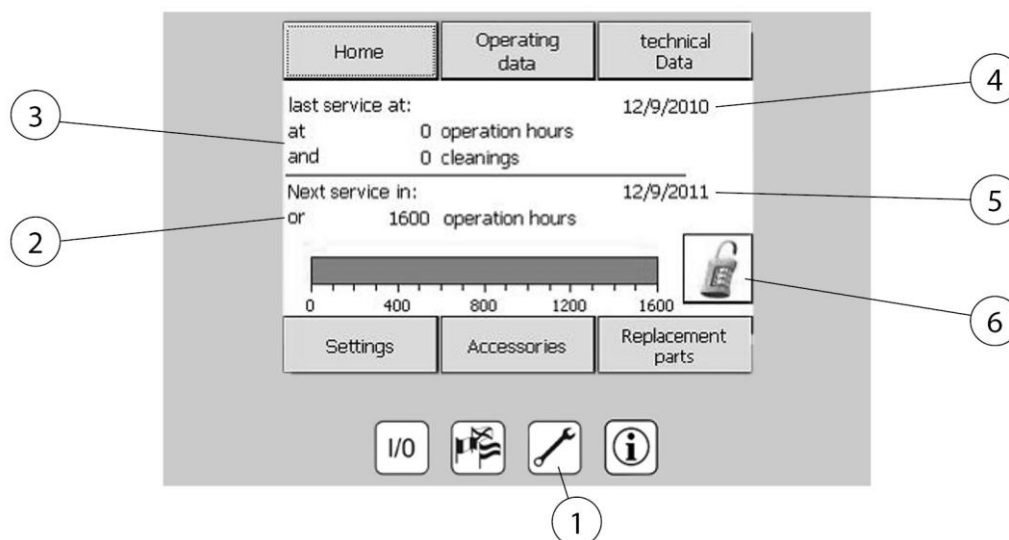


Fig. 26: Maintenance menu

Item	Description	Item	Description
1	Maintenance menu button	4	Date of last service
2	Next service on:	5	Date when service due
3	Last service on:	6	Activation codes entry

Tab. 29: Maintenance menu

Maintenance menu button (Pos. 1)

Displays next maintenance date and the date of last maintenance performed. Activation code entry for optional accessories.

NOTE

since the product is a safety-relevant device, it is mandatory that correct and proper functioning is checked at regular intervals and that any necessary maintenance work is carried out. Maintenance frequency depends on the product operation time. If this is exceeded, a warning message will be displayed to remind you of the overdue, legally required maintenance. Please contact the manufacturer as soon as possible to arrange a maintenance date.

6.3.9 Setting the system parameters

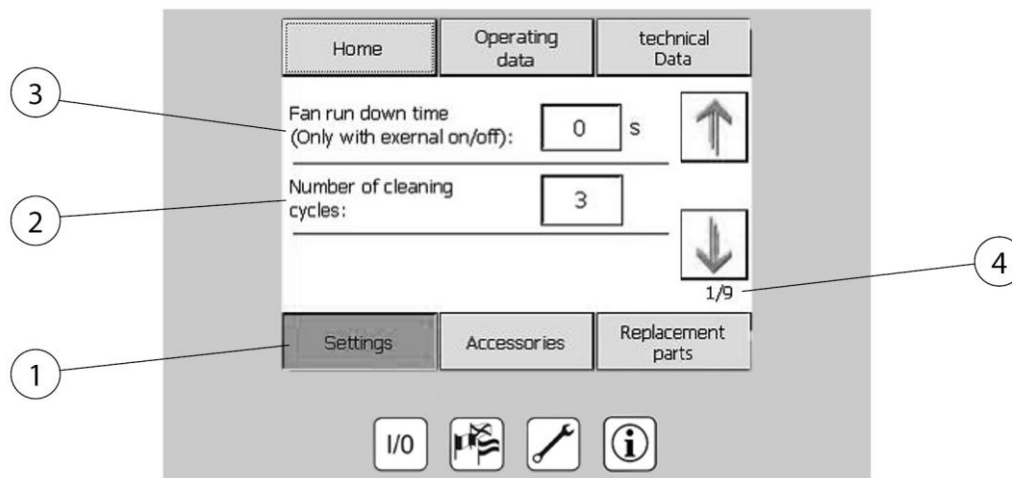


Fig. 27: Parameter settings

Item	Description	Item	Description
1	Settings menu	3	Fan run-on time
2	Number of cleaning processes	4	Page 1 of 9

Tab. 30: Parameter settings

The following system parameters can be modified in the **Settings (Pos. 1)** menu:

- Fan run-on time (only if “external on/off” option is activated)
- Number of filter cleaning cycles when at a standstill
- Time and date

Note: The product setting parameters are access-protected and can only be changed by authorised specialist personnel.

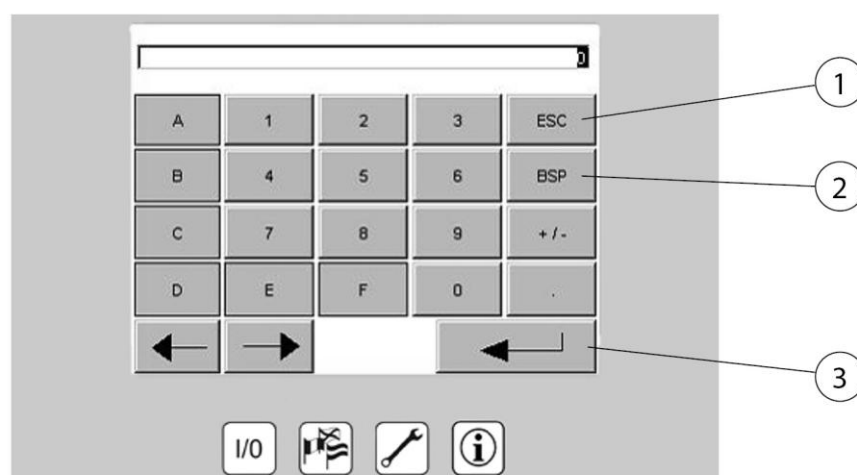


Fig. 28: Parameter entry keypad

Item	Description	Item	Description
1	Delete	3	Confirm
2	One digit back		

Tab. 31: Parameter entry keypad

To change parameters, press the value to be changed and enter and confirm the new value using the keypad.

6.3.10 Calibration of the control display

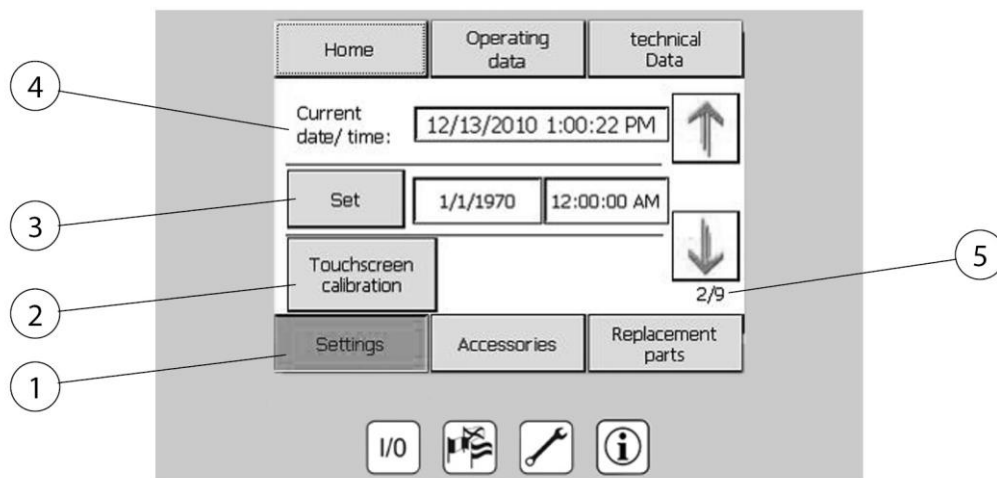


Fig. 29: Calibrating the control display

Item	Description	Item	Description
1	Settings menu	4	Current date and time
2	Calibrating the control display – make settings	5	Page 2 of 9
3	Setting/Confirming		

Tab. 32: Calibrating the control display

If touchscreen operation becomes inaccurate or the control display does not react correctly to entries, the touchscreen must be recalibrated. To do this, please (Item 2) tap the “Calibrate control display” button. Then follow the instructions on the screen.

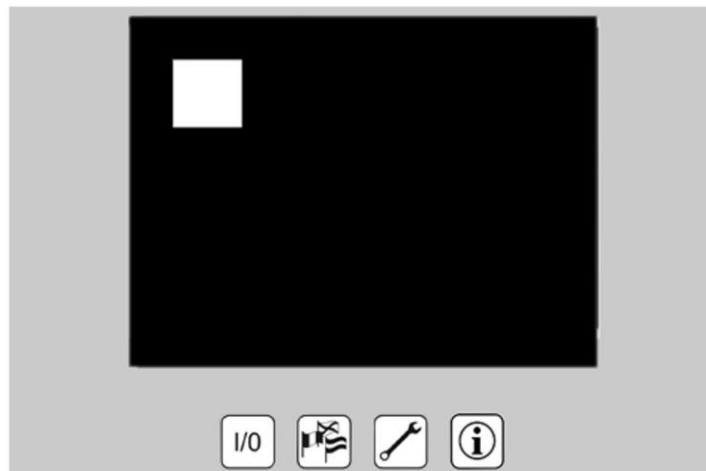


Fig. 30: Screensaver

Screensaver:

a screensaver will start after 15 minutes without user input. As soon as any point on the control display is tapped, the screensaver disappears and the normal screen is displayed. You can still switch the system on or off using the I/O key if the screensaver is active.

6.3.11 Operating elements error messages

If there is a product malfunction, critical errors and warnings are distinguished. Critical error which result in immediate product switch-off are labelled using a warning window with a red background.

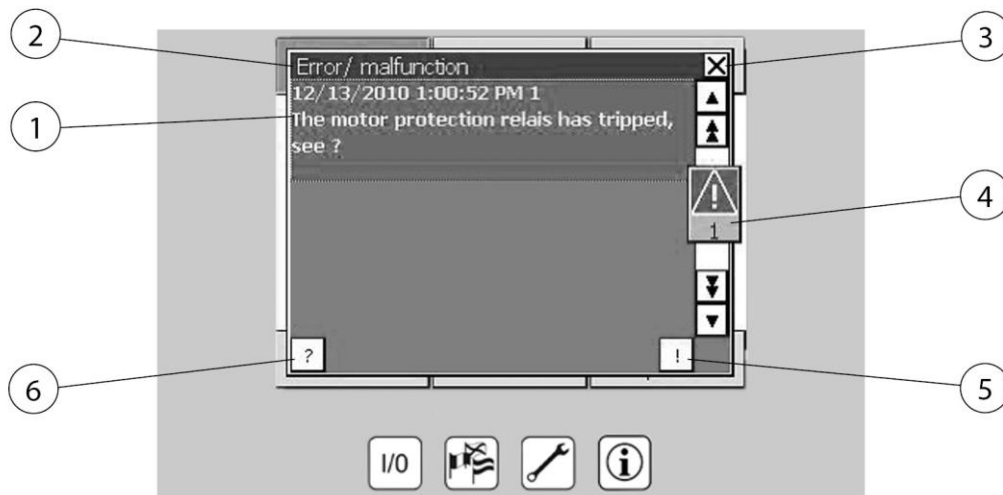


Fig. 31: Operating elements error message

Item	Description	Item	Description
1	Example of error message	4	Error indicator (number of error messages)
2	Error/Fault/Warning	5	Acknowledgement of error message
3	Hide fault message	6	Show info text for error message

Tab. 33: Operating elements error message

Critical error:

These errors cause the product being to be switched off immediately. Once the error has been rectified it can be acknowledged by tapping the acknowledge button (Pos. 5). The product can only be switched on again once the error has been rectified and acknowledged.

For each error message, a help text can be displayed via the button (Pos. 6), in which the error that has occurred is explained in more detail. The "Error/Fault" window can be hidden by tapping the button (Pos. 3). If an error is present which has not been acknowledged the error indicator (Pos. 4) will notify you of this. If this indicator is tapped, the "Warning" and "Error/Malfunction" windows both appear. Either of these windows can be closed if it does not contain a warning or an error by tapping (Pos. 3). If more than one message is being displayed you can select and acknowledge each one by tapping it after the error has been eliminated.

6.3.12 Error messages for optional extraction capacity regulation

If there is an error in the frequency converter, the following message appears on the control display:



Fig. 32: Frequency converter error message

Item	Description	Item	Description
1	Fault: Frequency converter fault	4	Error indicator (number of error messages)
2	Error/Fault	5	Acknowledgement of error message
3	Hide fault message	6	Show info text for error message

Tab. 34: Frequency converter error message

Please contact our service department if this error message is displayed.

6.3.13 Warnings

Warnings are used to notify the system operator of non-critical system conditions or pending maintenance.



Fig. 33: Warnings

Item	Description	Item	Description
1	Example warning	4	Error indicator (number of warnings)
2	Warning	5	Acknowledge warning
3	Hide warning	6	Info text for warning

Tab. 35: Warnings

Warnings are not critical for system operation and can be hidden at any time by acknowledging them by tapping (Pos. 3). If the warning condition remains the message will be displayed again in 5 minute intervals and must be acknowledged.

In any warning message, you can use Pos. 3 to display a help text which will explain the warning condition in more detail. You can hide the entire window by tapping Pos. 1.

If the warning is not acknowledged and the window is hidden the error indicator indicates that there is a warning. If this indicator is tapped, the "Warning" and "Error/Malfunction" windows both appear. You can then acknowledge the warning there. You can close either of these windows if it does not contain a warning or an error by tapping (Pos. 1).

6.4 Setting the extraction capacity regulation (optional)

The automatic extraction power control constantly monitors the vacuum set in the connected piping system. Depending on the activation of the central extraction systems (air requirement) and saturation of the filters, it

automatically controls the fan speed so that there is always a constant extraction capacity at the individual central extraction systems.

The product therefore only works demand-oriented which results in the following advantages:

- Constant extraction capacity on each central extraction system
- Energy saving due to optimum fan speed (energy efficiency).
- Protects filters and product components (longer service life)
- Reduction of noise emissions (health and safety).

⚠ DANGER

Danger of electric voltage!

The extraction capacity can only be set in the switched-on operating mode and when the control cabinet is open.

Adjustment work may only be carried out by a qualified electrician or the manufacturer's service department.

To adjust the extraction capacity, proceed as follows:

Example illustration:

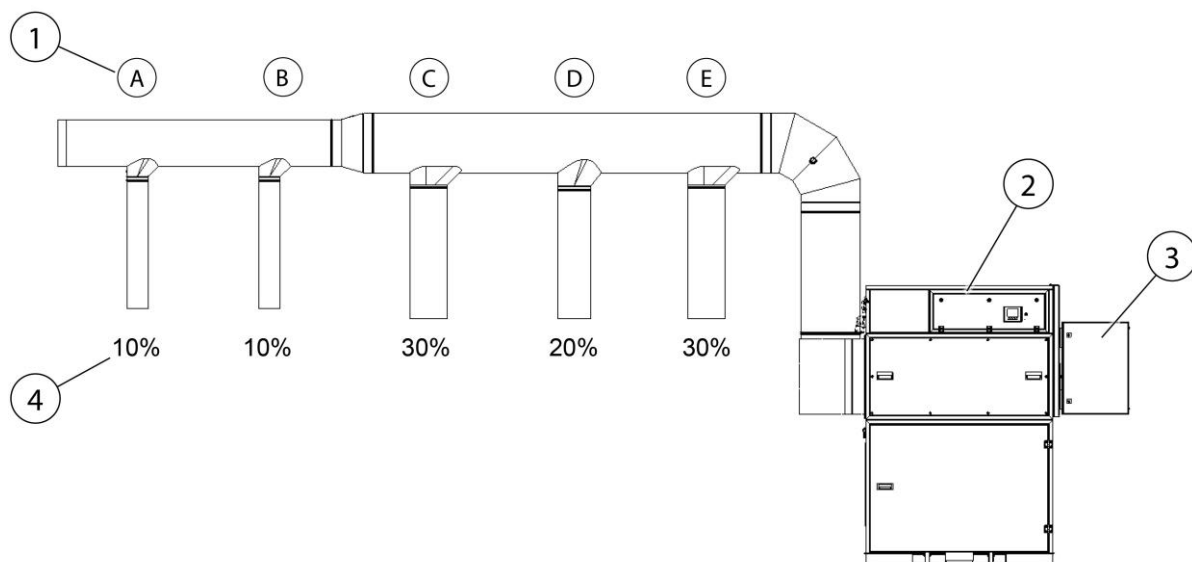


Fig. 34: Setting the extraction capacity regulation

Pos.	Description	Pos.	Description
1	Central extraction elements (A – E)	3	Control cabinet with frequency converter (FC)
2	Filter system	4	Free cross-sectional area of the central extraction elements in %.

Tab. 36: Setting the extraction capacity regulation

1. Close all extraction elements (A – E) (Pos. 1).
2. Switch on the product. See also the chapter “Commissioning”.
3. Now open the most distant central extraction elements so that approx. 20 % of the free cross-sectional area is reached. In this example, extraction elements A + B must be fully opened.
4. Open the control cabinet (Pos. 3) and adjust the extraction capacity on the frequency converter display so that it meets the required demand or the regulations.

NOTE

For settings on the frequency converter, see the following chapter:
Setting the extraction capacity control on the frequency converter (optional)

5. Further extraction elements can now be opened. The extraction capacity control detects the falling vacuum and automatically regulates the air requirement so that the previously set extraction capacity is guaranteed at the respective central extraction elements.

NOTE

It is not the fan speed that is adjusted on the frequency converter (FC), but the vacuum in the extraction pipe. Please note the following:

The filter cartridges become saturated over their life cycle, which means that the extraction capacity decreases. The extraction power compensates this automatically, but only until the maximum fan speed is reached. Further readjustment via the frequency converter will then be ineffective.

When the maximum fan speed is reached, the optimum extraction capacity at the respective central extraction elements can no longer be guaranteed. The filter must be changed, see also chapter "Troubleshooting."

6.5 Setting the extraction capacity control on the frequency converter (optional)

If there is no potentiometer for adjusting the extraction capacity control, the settings must be made on the frequency converter (FC).

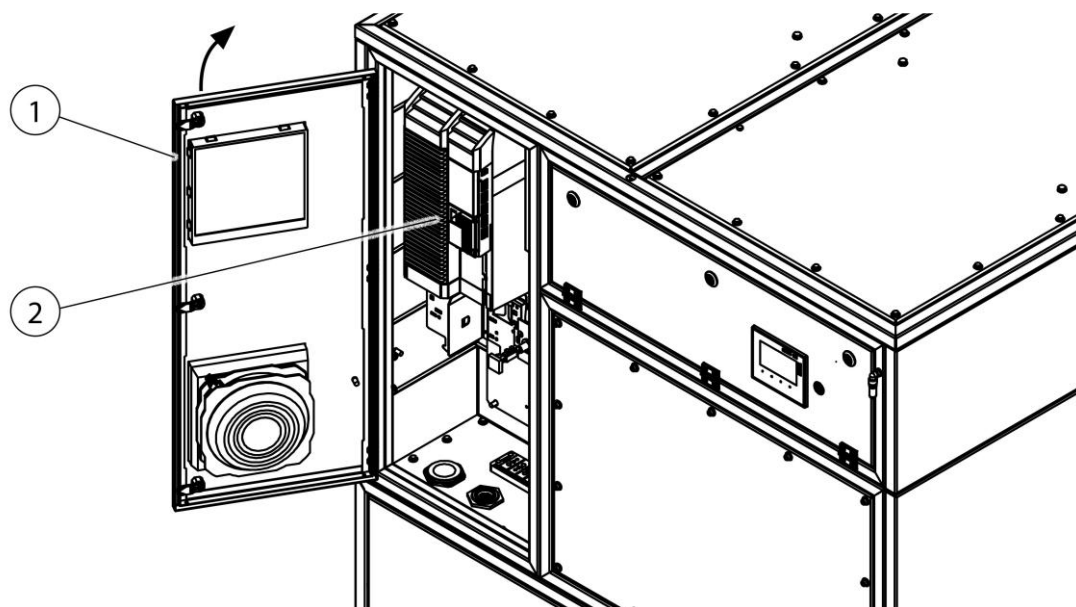


Fig. 35: Access to the frequency converter

Pos.	Description	Pos.	Description
1	Control cabinet door	2	Frequency converter (FC)

Tab. 37: Access to the frequency converter

Proceed as follows to set the extraction capacity control:

1. Open the control cabinet door (Pos. 1). To unlock, set the main switch to position 0.
2. Supply the product/frequency converter with voltage by switching the product on at the main switch.
3. Check what type of frequency converter is installed in the control cabinet.

NOTE

Depending on the type of frequency converter, a control element plug-in module may be required to enter the parameters.

6.5.1 Setting the extraction capacity – Siemens V20

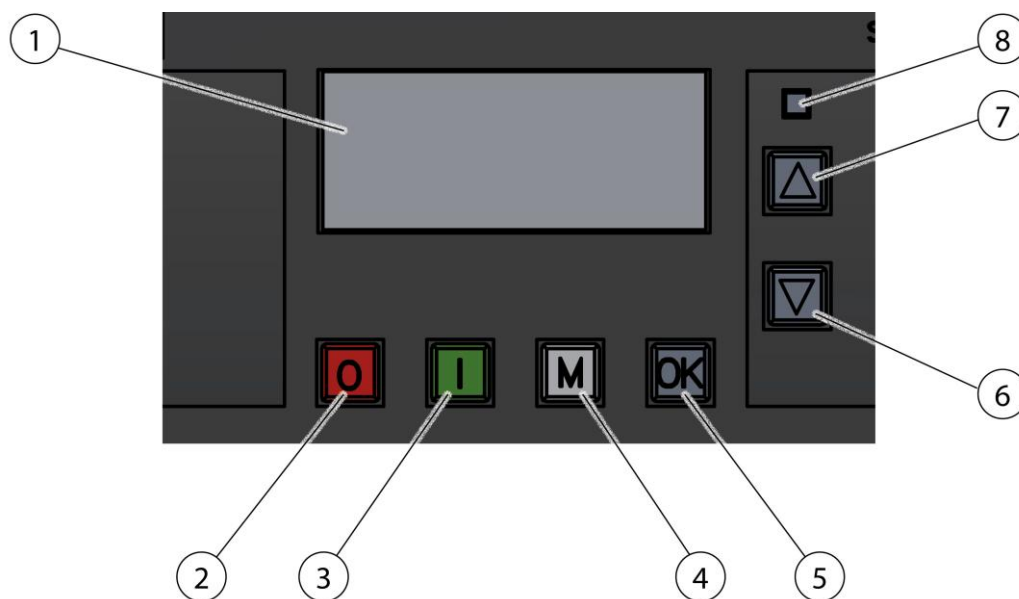


Fig. 36: Operating control – Functions

Pos.	Description	Function
1	LCD display	
2	0 – Stop	Stops the motor
3	I – Start	Starts the FC/motor
4	M – Briefly press the multifunction button (< 2 s)	Parameter settings

	M – Hold the multifunction button pressed (> 2 s)	Returns to the status screen Calls up the setup menu.
5	OK – Press briefly (< 2 s)	Switches between status values, calls up the edit mode or switches to the next digit.
	OK – Long press (> 2 s)	Quick editing of parameters.
6	Up arrow key	Use to navigate through the menu, change parameter values, change speed in RUN mode
7	Down arrow	
8	Status LED	

Tab. 38: Operating control – Functions

To adjust the extraction capacity, proceed as follows:

1. Briefly press the M button (Pos. 4).
2. Press the arrow key (Pos. 6) until "P2201" appears on the display.
3. Confirm "P2201" by pressing the "OK" button twice.

NOTE

Parameter "2201" sets the extraction capacity that should be achieved at any time from 0–100 %.

See also chapter "Setting the extraction capacity control".

4. Set the desired extraction capacity and confirm with OK (Pos. 5).
5. Press the arrow key (Pos. 7) until "r0000" appears on the display.
6. Press the M button (Pos. 4) for 3 seconds. The motor frequency is shown on the display.
7. Close the control cabinet and put the product into operation. See chapter "Commissioning".

6.5.2 Setting the extraction capacity – Siemens G120C

Operating control – Plug-in module

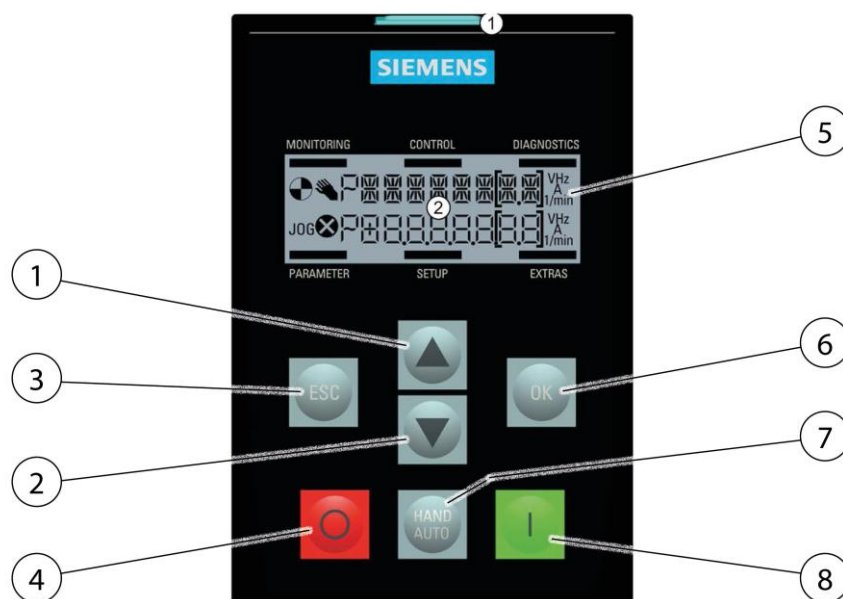


Fig. 37: Operating control – Functions

Pos.	Description	Function
1	Up arrow key	Use to navigate through the menu, change parameter values, change speed in RUN mode
2	Down arrow	
3	ESC	Short press (< 2 s) Returns to previous screen Long press (> 2 s) Returns to status screen Cancels input value
4	0 (Off)	AUTO mode – Long press (> 2 s) The motor reduces the speed to 0 MANUAL mode – Short press (< 2 s) The motor reduces the speed to 0
5	LCD – Display	
6	OK	To confirm menu commands
7	Auto/Manual	To activate the operating mode – manual or automatic
8	I (On)	In AUTO mode, the ON button is not active. In MANUAL mode, the inverter starts the motor.

Tab. 39: Operating control – Functions

To adjust the extraction capacity, proceed as follows:

1. Briefly press the ESC button (Pos. 3) until "Monitor" appears on the display (Pos. 5).
2. Press the arrow key (Pos. 1) until "PARAMS" appears on the display.
3. Confirm "PARAMS" with the OK button (Pos. 6). "STANDARD FILTER" appears on the display.
4. Press the arrow key (Pos. 1) until "EXPERT FILTER" appears on the display. Then confirm with OK (Pos. 6).
5. Use the arrow key (Pos. 1) to call up parameter "0003" and confirm with OK (Pos. 6).
6. Press the arrow key (Pos. 2) until "3" appears on the display and confirm with OK.
7. Press the arrow key (Pos. 1) until "2201" appears on the display. Then confirm with OK (Pos. 6).

NOTE

Parameter "2201" sets the extraction capacity that should be achieved at any time from 0–100 %.

See also chapter "Setting the extraction capacity control".

8. After setting the extraction capacity, press the ESC button (Pos. 3) twice.
9. Close the control cabinet and put the product into operation. See chapter "Commissioning".

6.6 Commissioning services

⚠ WARNING

Danger due to faulty product condition.

The product must be fully installed before commissioning begins. All doors must be closed and the necessary connections must have been made.

1. Ensure that the product is supplied with compressed air and power.
2. Press the main switch of the product.
3. Switch on the product using the button on the operating control labelled "0" and "I".

4. The fan starts and the display indicates error-free operation of the product.
5. Fault-free operation is signalled by a green background in the operating display.

If there is a fault, please refer to the “Troubleshooting” chapter.

7 Maintenance

The instructions in this chapter are intended as minimum requirements. Depending on the operating conditions, further instructions may be required to keep the product in optimal condition.

The maintenance and repair work described in this chapter must only be performed by specially trained repair personnel of the operating company.

Spare parts used must comply with the manufacturer's specified technical requirements.

This is guaranteed if original spare parts are used.

The safe and environmentally friendly disposal of operating materials and replacement parts must be ensured.

The safety instructions in these operating instructions must be observed during maintenance work.

7.1 Care

The care of the product is essentially limited to cleaning all surfaces of the product and – if present – checking the filter inserts.

The warning notices listed in the chapter "Safety notes for maintenance and fault removal" must be observed.

NOTE

The product may not be cleaned with compressed air. This may result in dust and/or dirt particles getting into the ambient air.

Proper care helps to maintain the product in a continuous functional state.

For optimum care and cleaning of the powder-coated surfaces, the following must be observed:

- Thoroughly clean the product monthly or as needed.
- Clean the exterior areas of the product with a suitable industrial vacuum cleaner of dust classification H or with damp soft cloths/industrial cotton wool.
- For stubborn dirt, use commercially available household cleaners. Avoid vigorous rubbing.
- Do not use any abrasive agents that scratch.
- Do not use any acidic or strongly alkaline cleaning agents.
- Do not use organic solvents containing esters, ketones, alcohols, hydrocarbons or similar.

7.2 Maintenance

NOTE

The quality standard can only be guaranteed if original spare parts are used.

The manufacturer accepts no liability for damage caused by the use of non-original parts.

All maintenance work must be recorded in the maintenance logbook.

7.3 Safety instructions for maintenance

Regular inspection and servicing have a positive effect on the reliable functioning of the product.

Observe the warning notices for servicing and troubleshooting in the "Safety" chapter.

Maintenance of the product is essentially limited to visual inspection and checking for damage, signs of wear and leaks.

In addition, the following maintenance points must be carried out:

⚠ WARNING

Health hazards caused by welding fume particles

Inhalation of welding fume particles, especially welding fume particles from welding processes on alloyed steels, can damage your health as they are 'respirable'. Skin contact with welding fume particles can cause skin irritation in sensitive individuals.

To avoid contact with and inhalation of these dust particles, wear disposable overalls, protective goggles, gloves and a suitable Class FFP2 respiratory protection filter mask in accordance with EN 149.

ATTENTION

Avoid whirling up welding particles!

Carry out maintenance work with caution and care when in possible contact with welding fume particles. Avoid vibrations and shocks!

ATTENTION

Do not clean the product with compressed air. This may result in dust particles getting into the ambient air.

Always ensure there is adequate lighting and ventilation for maintenance tasks.

7.3.1 Emptying the dust collection container

The dust collection container fill level must be checked at regular intervals. How often the dust collection bucket/disposal bag needs replacing depends on the type and quantity of the deposited dust particles. For this reason, we cannot state specific replacement intervals. Since particularly light dust particles can be stirred up simply by the airflow through the inside of the product and in the course of the dust collection bucket/disposal bag replacement, the dust collection bucket/disposal bag may only be filled up to 80%.

⚠ WARNING

Danger of crushing

Make sure that no body parts or objects are located between the sealing flange on the dust collection bucket/dust collection trolley and the dust chute during the lifting process.

When emptying the dust collection container, please proceed as follows:

1. Switch off the product on the control display using the I/O pushbutton.
2. Wait two minutes for the dust particles to settle inside the filter section.

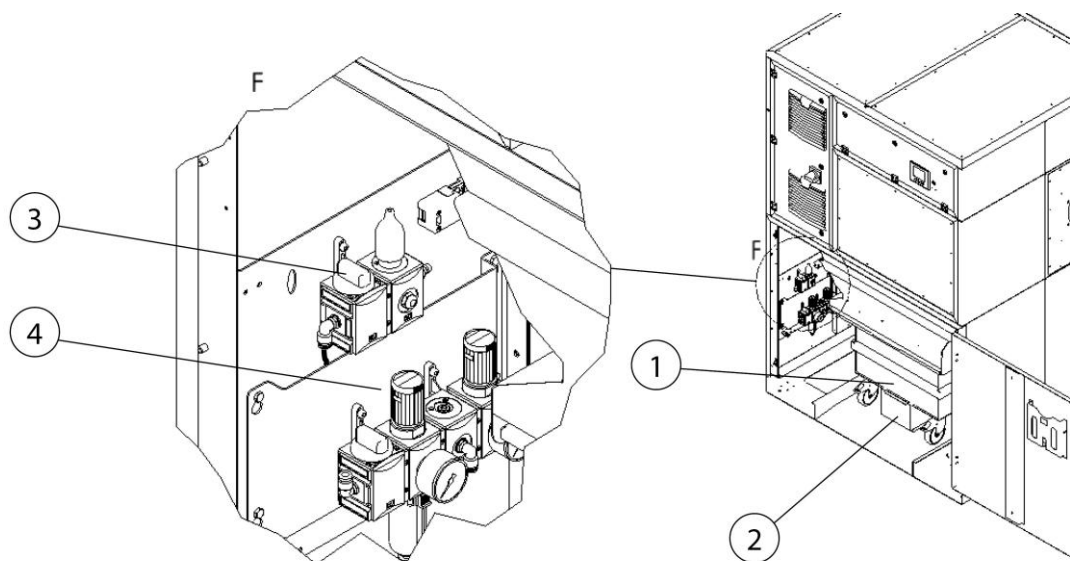


Fig. 38: Access to the dust collection container

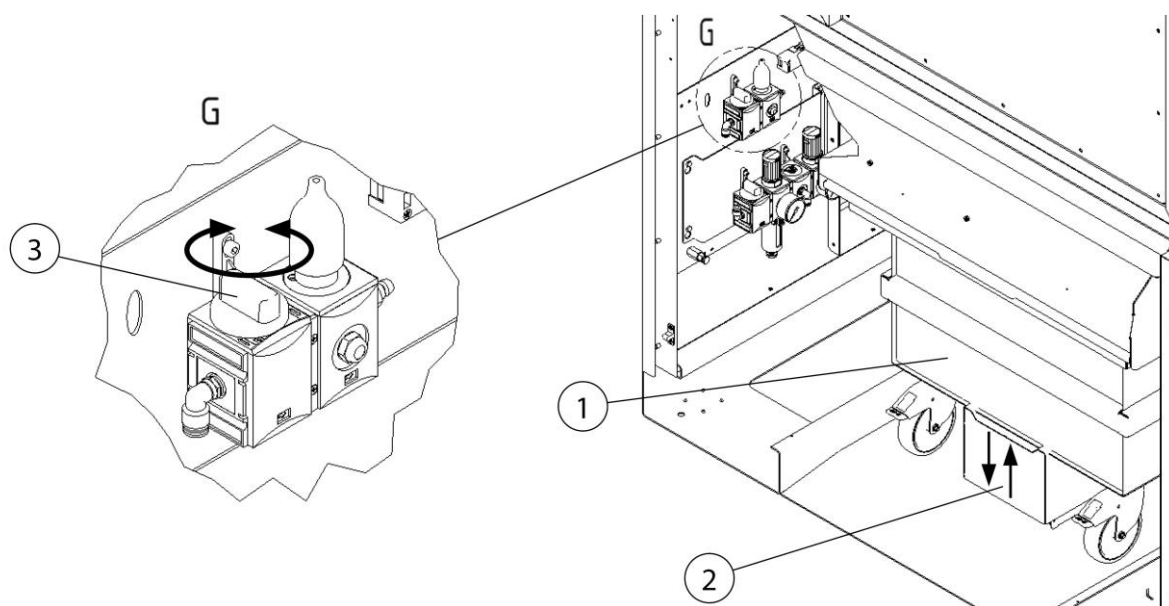


Fig. 39: Lowering the dust collection container

Item	Description	Item	Description
1	Dust collection container	3	Rotary knob (compressed air valve) - for raising and lowering the lifting device
2	Lifting device for dust collection container	4	Compressed air unit

Tab. 40: Positions on the product

3. Open the maintenance door for the dust collection area.
4. Lower the dust collection container (Pos. 2) by actuating the rotary knob on the compressed air valve (Pos. 3).
5. The following error message appears on the control display:



Fig. 40: Dust collection container error message

Item	Description	Item	Description
1	Error message: Dust collection container missing or open. See "?"	4	Error indicator (number of error messages)
2	Error/fault	5	Acknowledgement of error message
3	Hide error/fault message	6	Show info text for error message

Tab. 41: Dust collection container error message

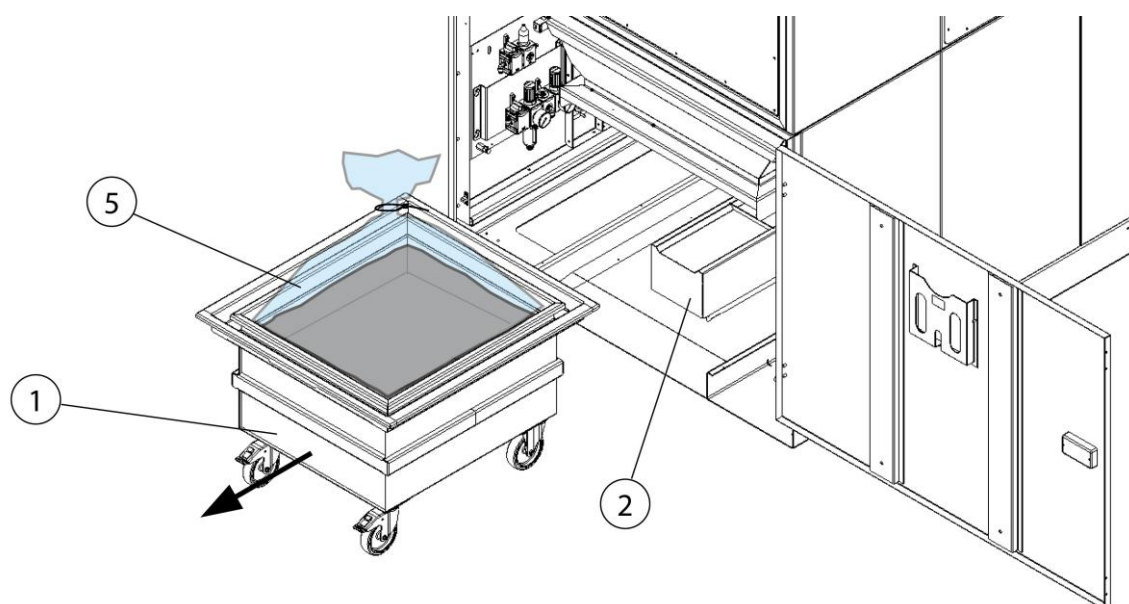


Fig. 41: Removing the dust collection container

Item	Description	Item	Description
1	Dust collection container	5	Disposal bag
2	Lifting device for dust collection container		

Tab. 42: Positions on the product

- Carefully pull the dust collection container (Pos. 1) off the lifting device (Pos. 2) without raising dust particles.
- Close the disposal bag (Pos. 5) airtight, remove it from the dust collection container and dispose of it in accordance with the applicable regulations.

⚠ WARNING

This container must be disposed of properly. Never empty and reuse the container.

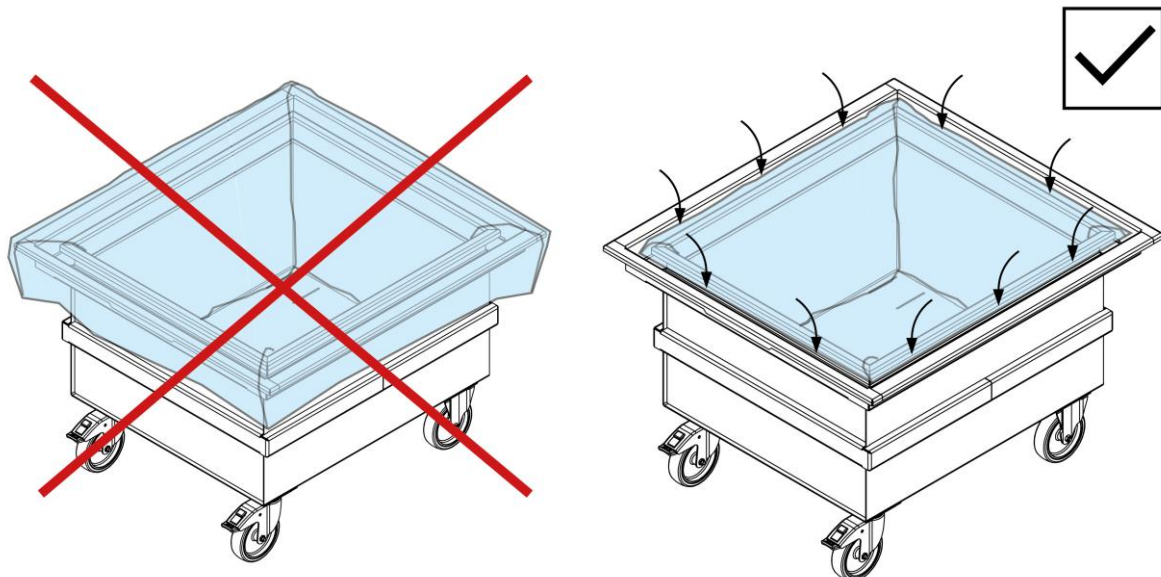


Fig. 42: Insert disposal bag

- Insert a new disposal bag (Pos. 5) into the dust collection trolley (Pos. 1) as shown in the figure.

ATTENTION

Place the disposal bag around the inner edge of the dust collection trolley only, as shown in the figure, otherwise the bag may be sucked up.

9. Push the dust collection container (Pos. 1) over the lifting device (Pos. 2) as far as it will go. Then actuate the compressed air valve until the rim of the dust collection container is pressed firmly against the sealing surface.
10. Acknowledge the fault message on the control display, close the maintenance door and put the product back into operation. See also the chapter Commissioning.

7.3.2 Draining the compressed air vessel condensate

Depending on usage, but at least once a month, the condensate must be drained from the compressed air vessel.

A condensate drain valve is located on the side of the compressed air maintenance unit.

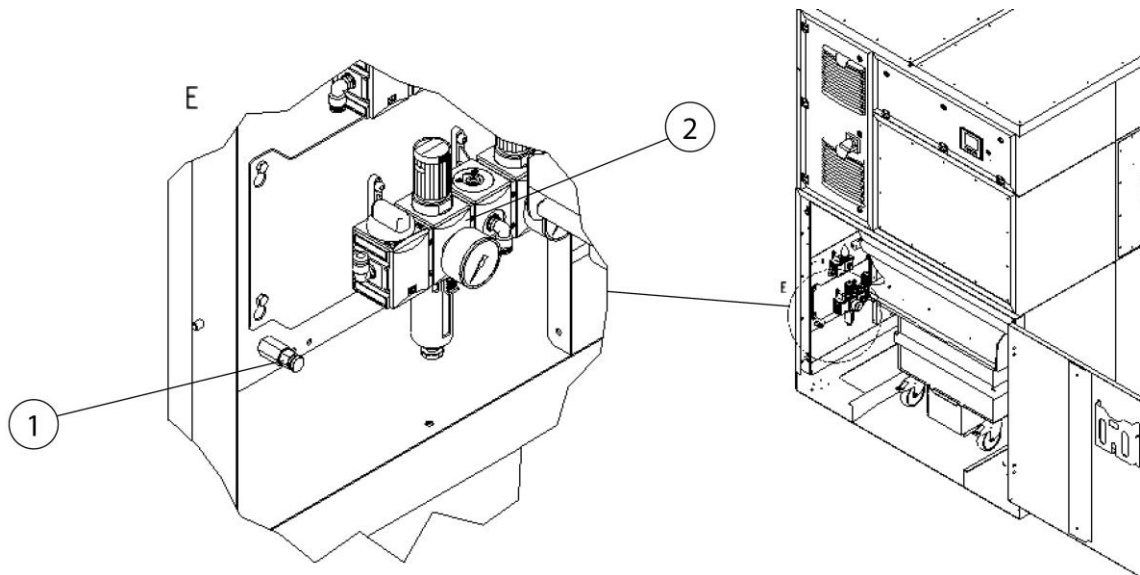


Fig. 43: Access to the condensate drain valve

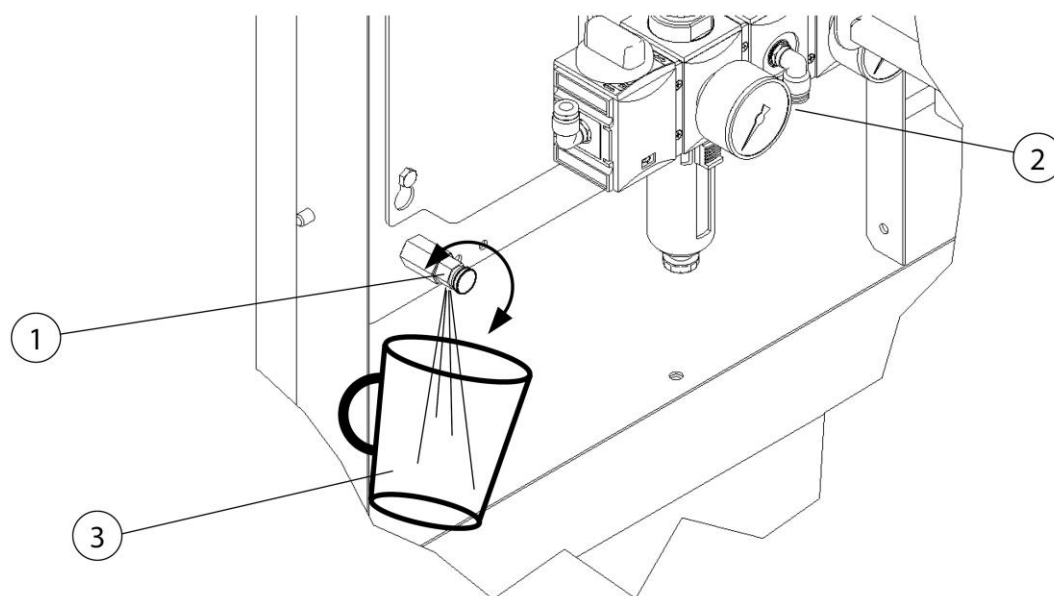


Fig. 44: Draining the condensate

Pos.	Description	Pos.	Description
1	Condensate drain valve	3	Dust collection trolley
2	Compressed air maintenance unit	4	Container

Tab. 43: Positions on the product

1. Hold a container (Pos. 4) under the outlet opening of the condensate drain valve (Pos. 1).
2. With the other hand, slowly open the condensate drain valve (Pos. 1) at the knurled screw.
3. Only close the condensate valve (Pos. 1) again when just air is escaping.

7.3.3 Draining the compressed air maintenance unit condensate

Depending on usage, but at least once a month, the accumulated condensate must be drained from the sight glass of the compressed air maintenance unit.

The condensate drain valve is located below the sight glass on the compressed air maintenance unit.

Maintenance is especially important to guarantee that the compressed air quality is maintained and the proper functioning of the filter cleaning system.

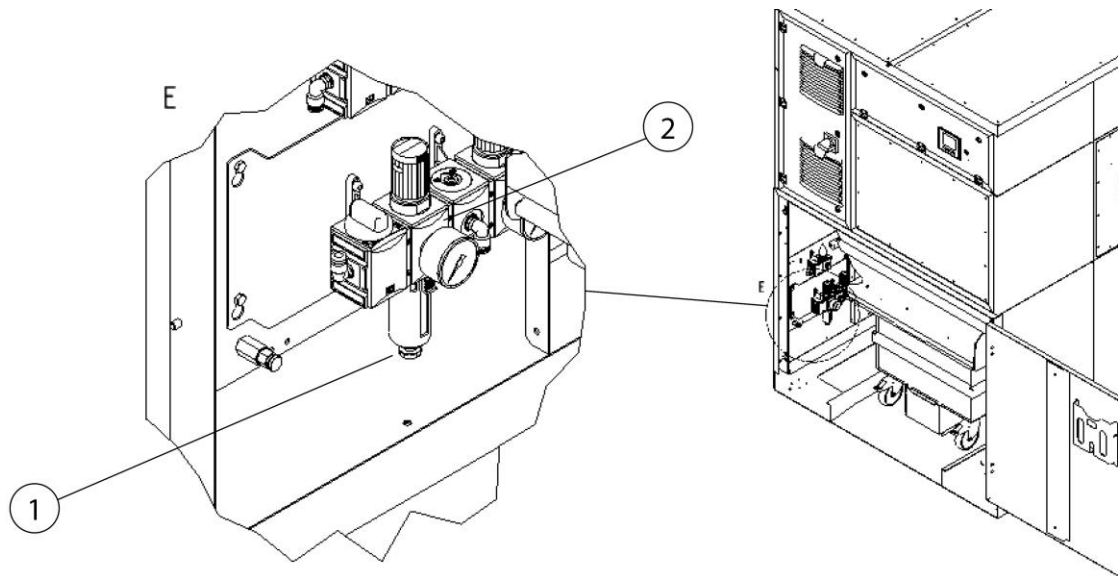


Fig. 45: Access to the condensate drain valve

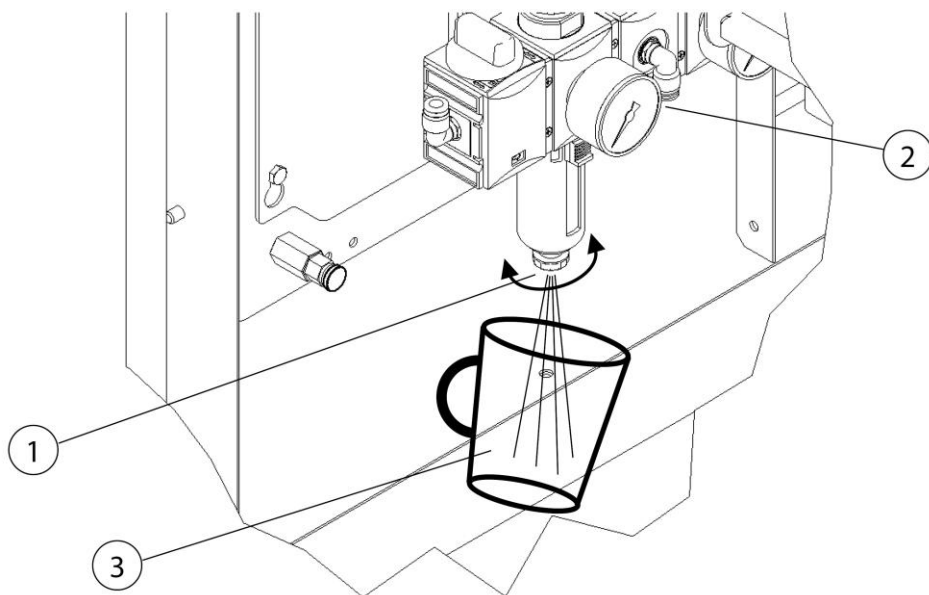


Fig. 46: Draining the condensate

Pos.	Description	Pos.	Description
1	Condensate drain valve	3	Container
2	Compressed air maintenance unit		

Tab. 44: Positions on the product

1. Hold a container (Pos. 3) under the outlet opening of the condensate drain valve (Pos. 1).
2. With the other hand, slowly open the condensate drain valve (Pos. 1) at the knurled screw.
3. Only close the condensate valve (Pos. 1) again when just air is escaping.

7.3.4 Changing the filter – Safety instructions

The life of the filter inserts depends on the type and amount of deposited particles.

As the dust accumulation in the filter increases, its flow resistance increases and the extraction capacity of the product decreases.

Even with products that may have automatic filter cleaning, adhering deposits can reduce the extraction capacity.

A filter change is required.

▲ WARNING

Health hazards caused by welding fume particles

Do not inhale welding dust / smoke! Serious injury to the lungs and respiratory tract is possible!

Sweat smoke contains substances that can cause cancer!

Skin contact with welding fume particles can cause skin irritation in sensitive individuals.

To avoid contact with and inhalation of these dust particles, wear disposable overalls, protective goggles, gloves and a suitable Class FFP2 respiratory protection filter mask in accordance with EN 149.



⚠ WARNING

Cleaning the filter inserts is not permitted. This inevitably leads to damage to the filter element, meaning the filter ceases to function and hazardous substances enter the air.

During the work described in the following section, pay particular attention to the seal on the main filter. Only an undamaged seal allows the product to achieve a high filter efficiency. Main filters with a damaged seal must therefore be replaced every time.

NOTE

Products with W3 certification according to requirements for W3/IFA certified welding fume separation class. (See "Technical data" chapter)

The W3 approval becomes void if:

- The product is used other than as intended or is subject to constructive modifications.
 - Non-original spare parts, in accordance with the spare parts list, are used.
-
- Only original replacement filters, because they guarantee the necessary filter efficiency and are matched to the product and its performance characteristics.
 - Switch the product off using the on/off switch.
 - Secure the product against unintentional switching on. If available, pull out the mains plug or secure the main switch in the 0 position with a padlock.
 - Disconnect the pressure supply, if present, and let the compressed air present in the product flow out via the condensate drain valve.

7.3.5 Extraction capacity regulation filter mat replacement

Depending on usage, but at least once a month, check the filter mats of the outlet and intake grille and replace them if necessary. Increased contamination leads to heat build-up in the control cabinet and can cause the product to fail.

Filter replacement can be carried out while the product is in operation.

Perform the filter change as follows:

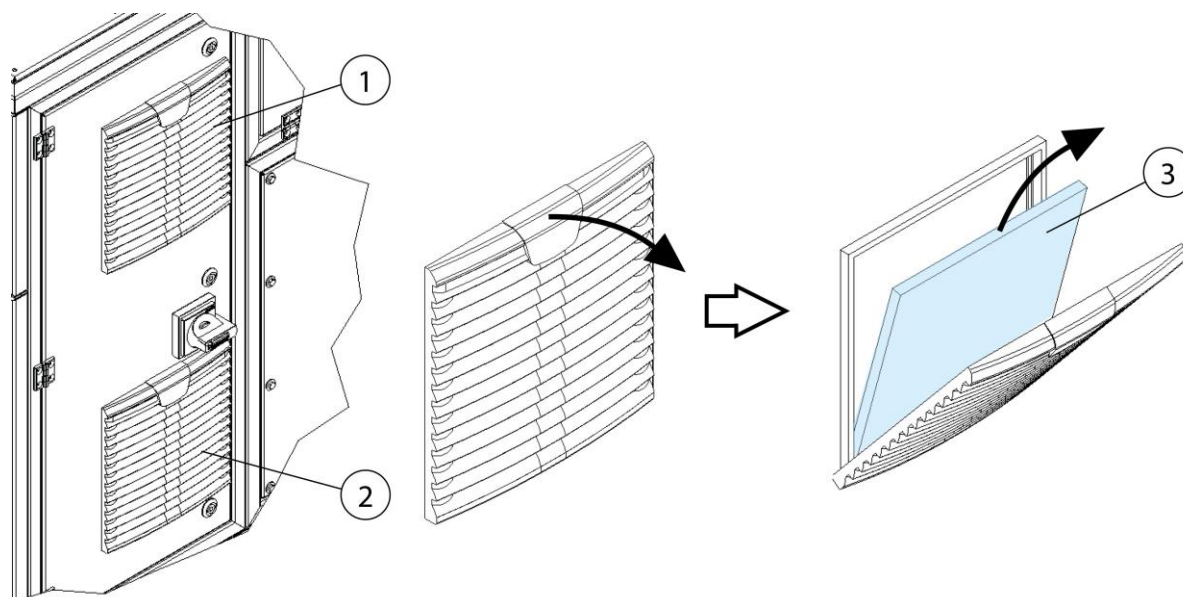


Fig. 47: Filter change – control cabinet ventilation

Pos.	Description	Pos.	Description
1	Air outlet grille	3	Filter mat
2	Intake grille		

Tab. 45: Positions on the product

1. Prepare two new filter mats.
2. Unlock the air outlet grille (Pos. 1) in the upper section by pulling it by hand and folding down.
3. Remove the contaminated filter mat (Pos. 3) and dispose of it in accordance with the applicable regulations.
4. Insert the new pre-filter mat and lock the outlet grille again by applying a little pressure by hand.
5. Repeat steps 1 – 3 for the intake grille (Pos. 2).

7.3.6 Filter change - cooling air side channel blower

Depending on usage, but at least once a month, check the filter insert of the cooling air supply of the side channel blower and replace it if necessary.

Increased contamination of the filter insert causes the side channel blower to heat up and can lead to product failure.

Filter replacement can be carried out while the product is in operation.

Perform the filter change as follows:

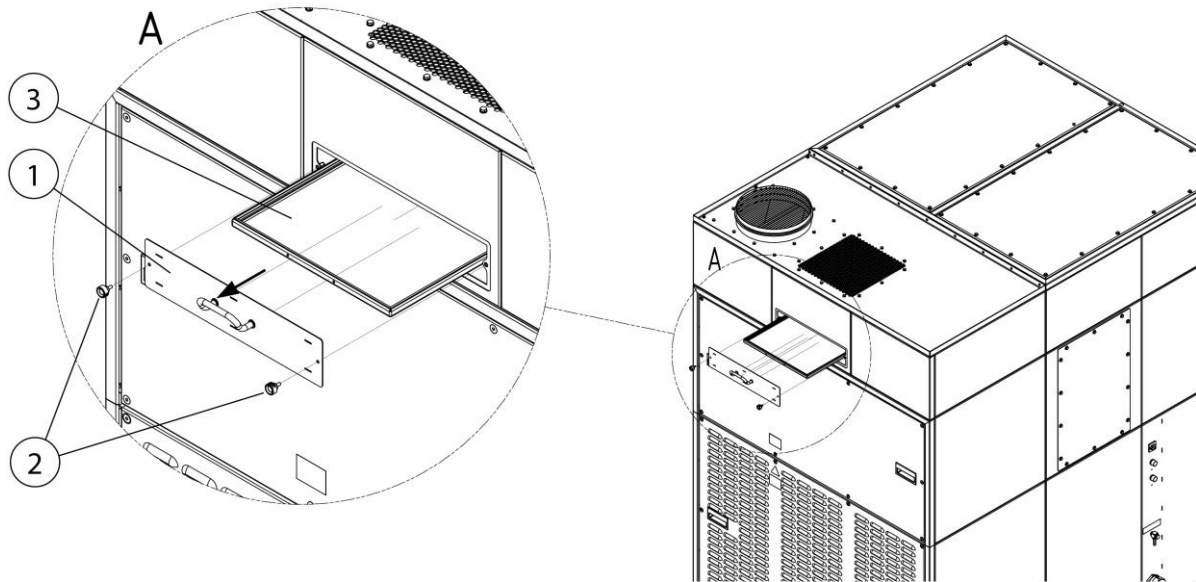


Fig. 48: Filter change - cooling air side channel blower

Pos.	Description	Pos.	Description
1	Maintenance door	2	knurled screw
3	Filter insert		

Tab. 46: Positions on the product

1. Open the maintenance door (Pos. 1) on the back of the product. To do this, loosen the knurled screws (Pos. 2) by hand and put the maintenance door aside.
2. Remove the contaminated filter insert (Pos. 3) and dispose of it in accordance with the applicable regulations.
3. Insert a new filter insert (Pos. 3) and close the maintenance door (pos.1) again with the knurled screws (Pos. 2).

7.3.7 Main filter replacement

Perform the filter replacement as follows:

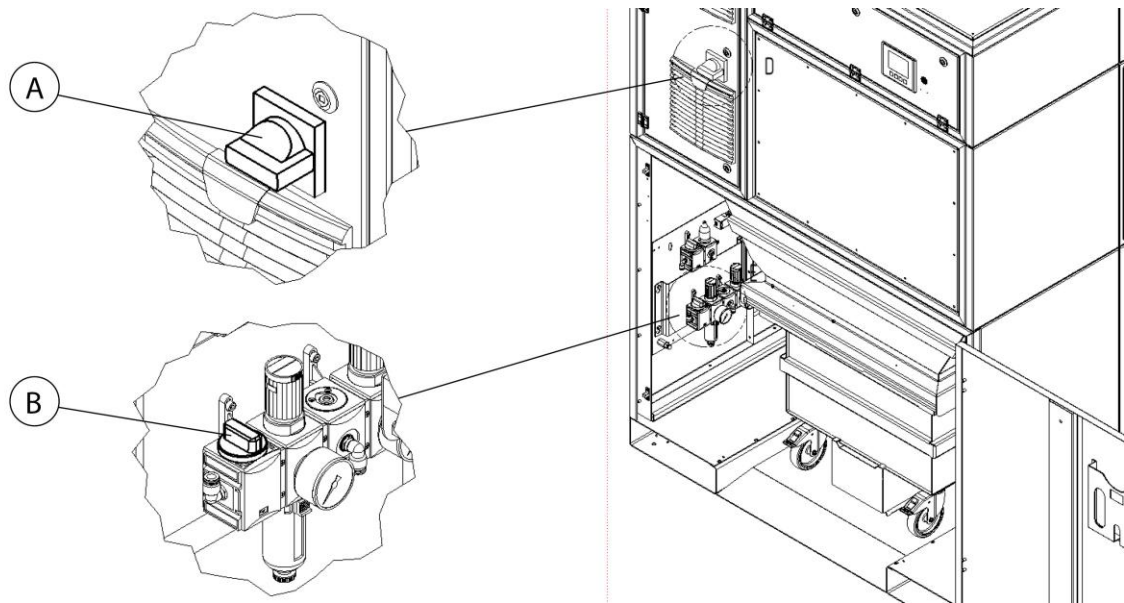


Fig. 49: Disconnect the product from the power supply and compressed air supply

1. Disconnect the product from the mains by switching the main switch (Pos. A) from 1 to 0 and securing it with a padlock against unintentional reconnection.
2. Disconnect the product from the compressed air supply by switching the rotary switch (Pos. B) from 1 to 0. A hissing sound signals that the compressed air system has been emptied.
3. Make sure the original replacement filter cartridges and the enclosed disposal bag are available.

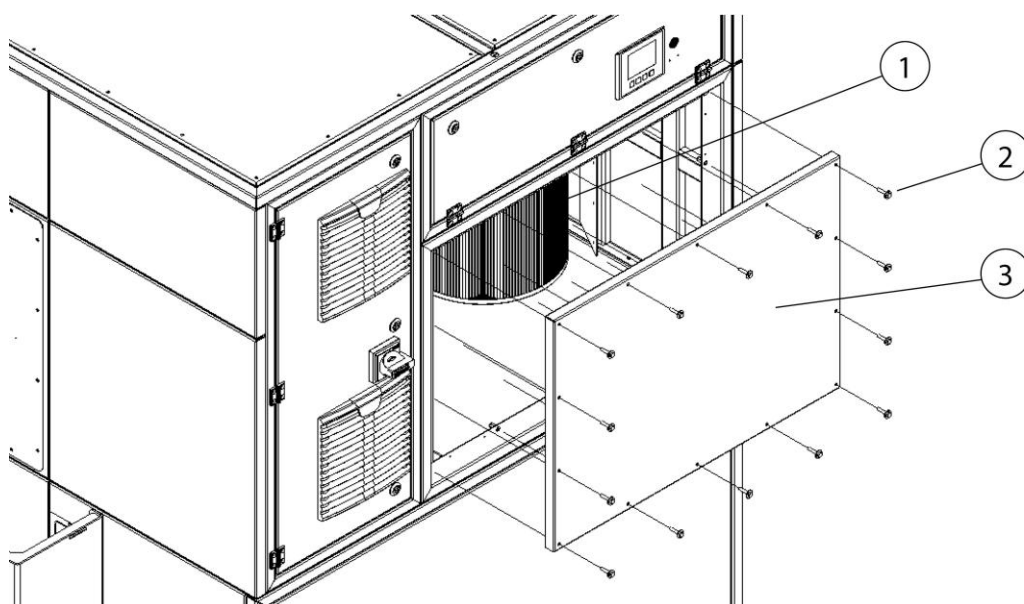


Fig. 50: Filter change – removing the maintenance cover

Pos.	Description	Pos.	
1	Filter cartridge	3	Maintenance cover
2	Screws		

Tab. 47: Positions on the product

- Remove the maintenance cover (Pos. 3) from the filter area by loosening the screws (Pos. 2).

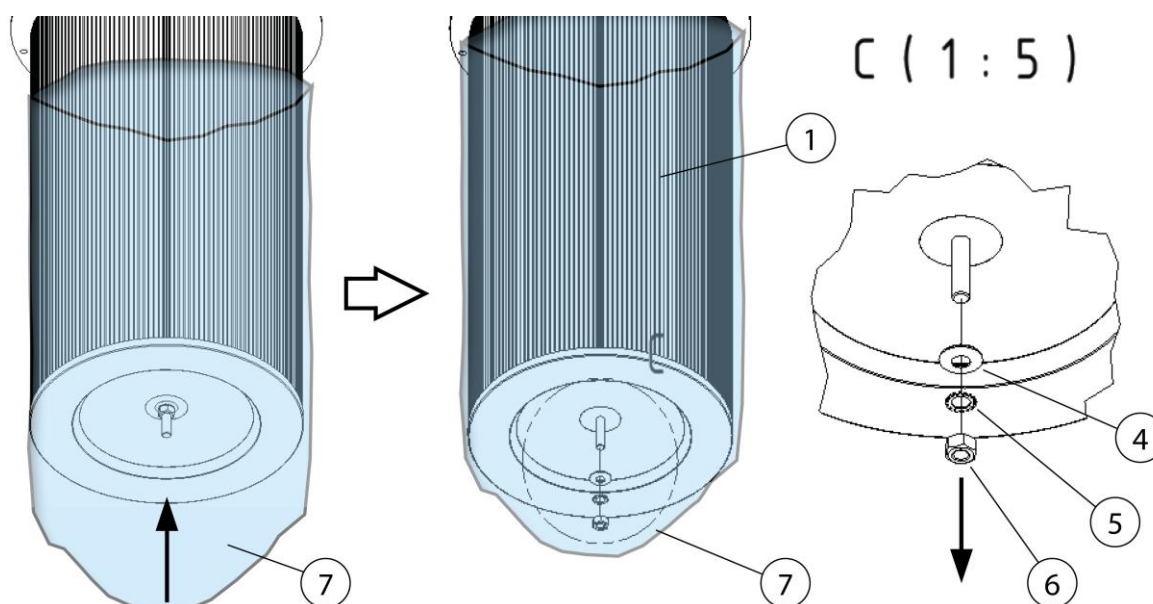


Fig. 51: Filter change – removing the filter cartridge

Pos.	Description	Pos.	Description
4	Sealing washer	6	Hexagon nut
5	Serrated lock washer	7	Disposal bag

Tab. 48: Positions on the product

5. Loosen the hexagon nut (Pos. 6) in the lower area of the filter cartridge, but do not remove it yet.
6. Carefully cover the filter cartridges with the disposal bag (Pos. 7) provided.
7. Hold the filter cartridge with the disposal container by hand and completely loosen the hexagon nut (Pos. 6) and drop it together with the serrated lock washer (Pos. 5) and sealing washer (Pos. 4) into the disposal bag.

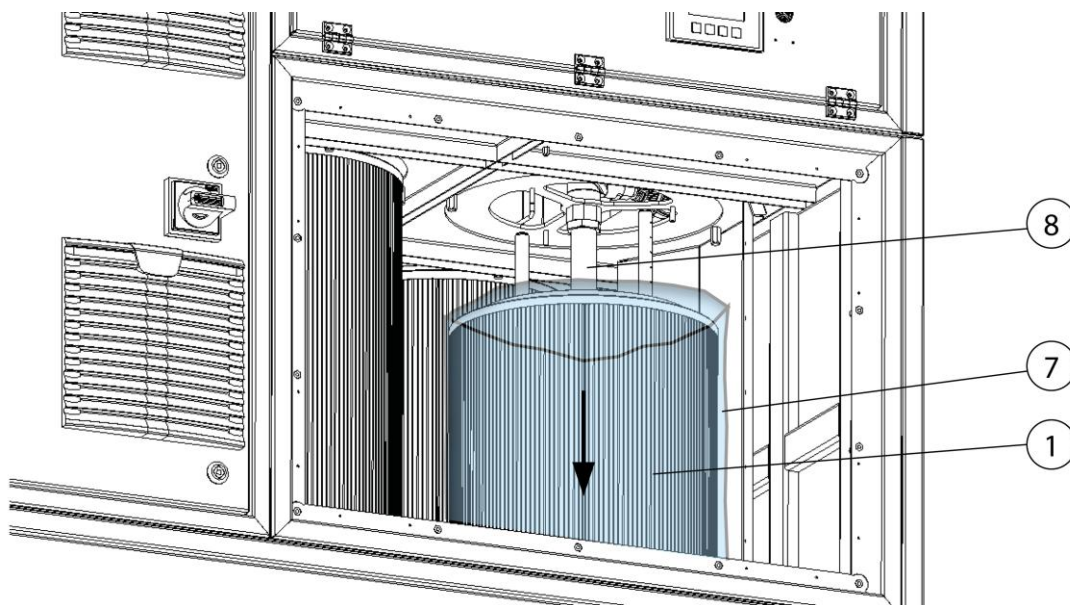


Fig. 52: Filter change – removing filter cartridges

Pos.	Description	Pos.	Description
1	Filter cartridge	8	Rotating nozzle
7	Disposal bag		

Tab. 49: Positions on the product

8. Let the disposal bag (Pos. 7) with the contaminated filter cartridge (Pos. 1) drop down alongside the rotating nozzle (Pos. 8).

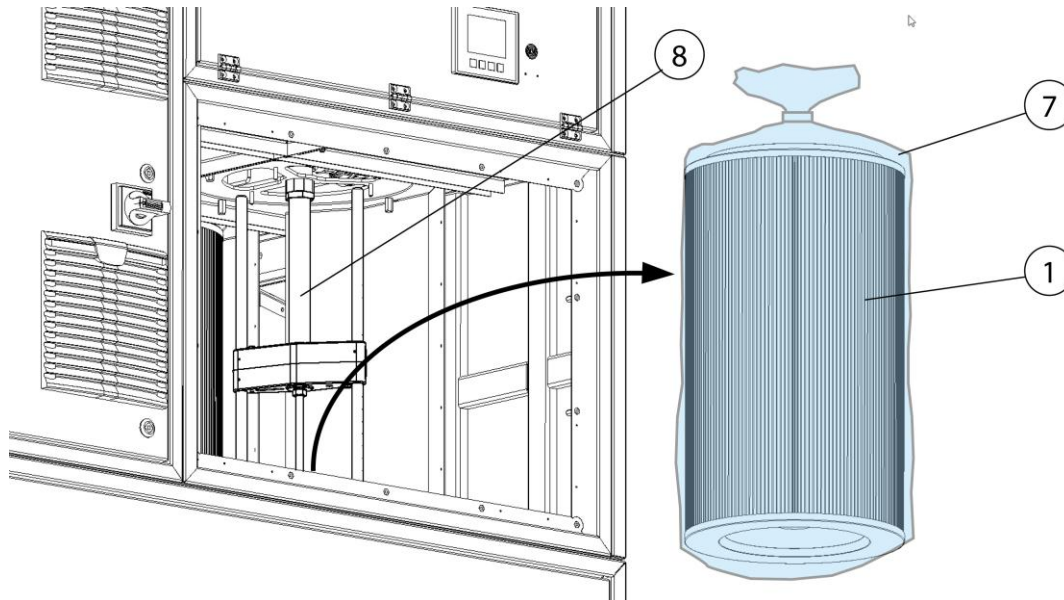


Fig. 53: Filter change – removing filter cartridges

9. Remove the disposal bag (Pos. 7) with the contaminated filter cartridge (Pos. 1) from the product, close it airtight and dispose of it in accordance with the applicable regulations.
10. Repeat steps 5 – 9 for the remaining filter cartridges.
11. After dismantling the contaminated filter cartridges, the new filter cartridges are installed in reverse order.
12. When installing the new filter cartridges, make sure that the seals of the filter cartridges are flush with the cartridge mounting plate.

After replacing the filter, carry out the following steps:

13. Screw/close maintenance doors.
14. Remove the padlock and unlock the product.
15. Restore the compressed air and power supply.
16. Commission the product. See also the chapter “Commissioning”.

7.3.8 Checking the compressed air container with compressed air safety valve

NOTE

The product has one or more compressed air containers with compressed air safety valve.

Products with compressed air container and safety valve must be serviced/checked according to current national regulations.

7.3.9 Checking the compressed air safety valve

The compressed air vessel with the compressed air safety valve is located in the rear area of the product. To test the compressed air safety valve, the product must be connected to the compressed air supply.

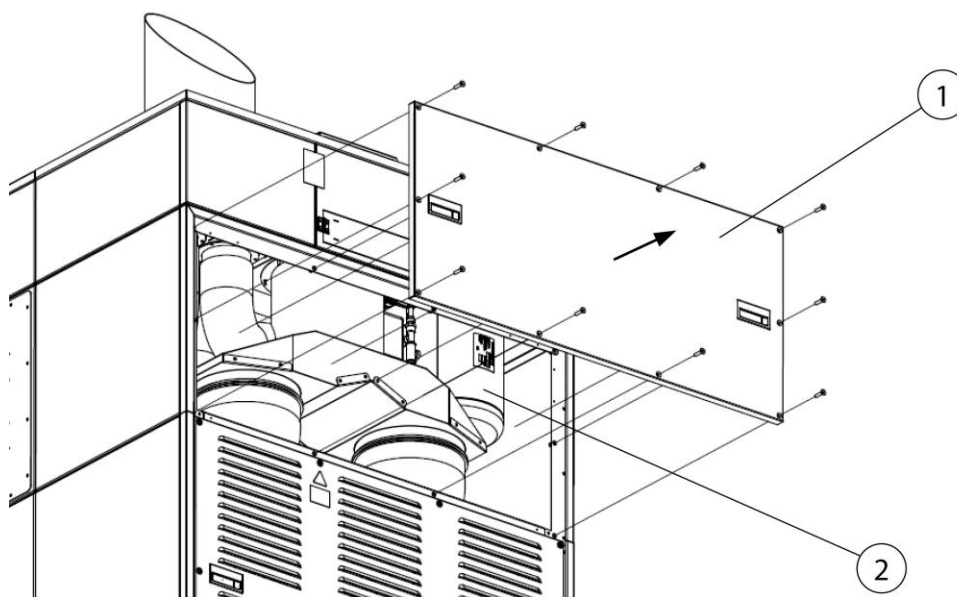


Fig. 54: Access to the compressed air vessel + compressed air safety valve

Pos.	Description	Pos.	Description
1	Maintenance cover	2	Compressed air container with compressed air safety valve

Tab. 50: Positions on the product

To gain access to the compressed air vessel/compressed air safety valve (Pos. 2) please proceed as follows.

1. Remove the upper maintenance cover (Pos. 1) on the rear of the product.

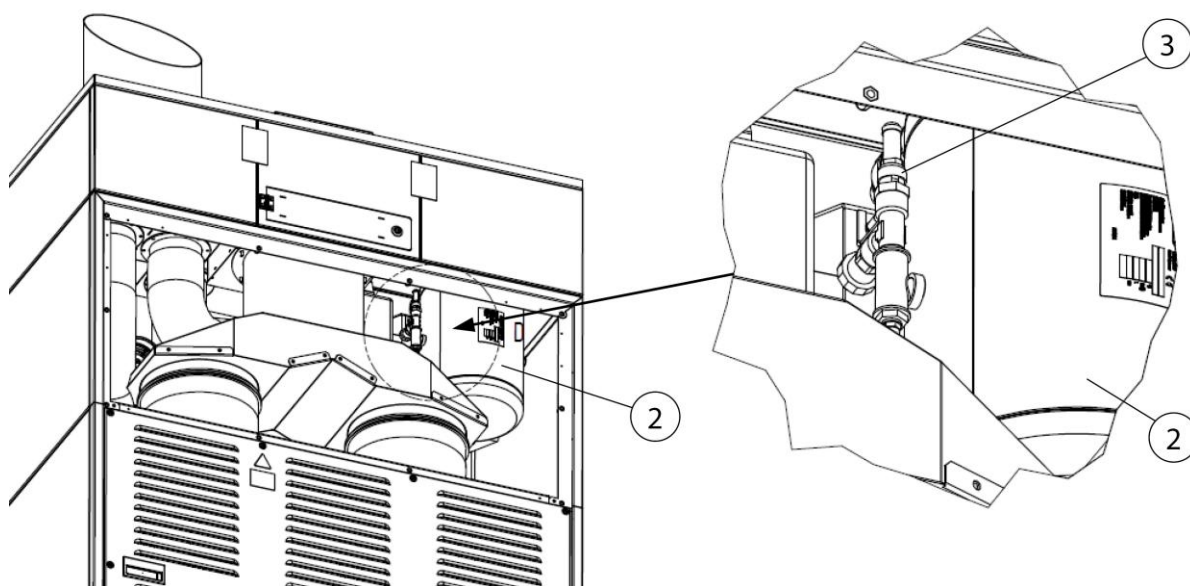


Fig. 55: Access to compressed air safety valve

Pos.	Description	Pos.	Description
2	Compressed air vessel	3	Compressed air safety valve

Tab. 51: Access to compressed air safety valve

2. The compressed air safety valve (Pos. 3) is located on the left hand side of the compressed air vessel (Pos. 2).

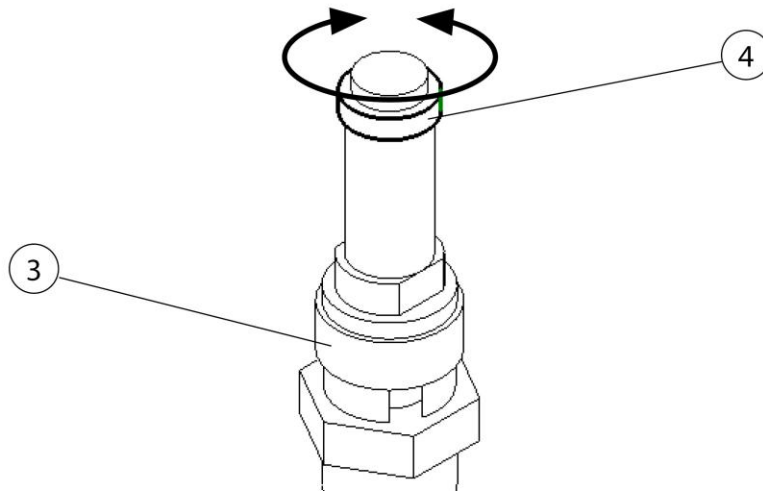


Fig. 56: Checking the compressed air safety valve

3. Loosen the knurled screw (Pos. 4) by turning it anticlockwise and open it with approx. 3–4 turns until the ventilation process occurs. (audible discharge of compressed air)
4. Let the compressed air safety valve blow off briefly (approx. 5 sec.).
5. Screw in the knurled screw (Pos. 4) as far as it will go and hand-tighten it.
6. Close the maintenance cover (Pos. 1) and put the product back into operation. See chapter “Commissioning”

7.3.10 Maintenance schedule

Activities	Time/interval	Information:
Emptying the dust collection container	As required	
Draining the condensate from the compressed air vessel	As required, but at least once per month	
Draining condensate from the compressed air maintenance unit	As required, however at least once per week	
Checking the compressed air safety valve	Every 6 months	
Replacing the main filter cartridge	As required	See the control display for current status, filter replacement at 2300 Pa
Filter mat replacement Extraction capacity regulation	At least once per month	
Filter mat replacement Cooling air supply - side channel blower	At least once per month	

Tab. 52: Maintenance schedule

7.3.11 Maintenance log (master copy)

Product machine number	Fan device number/ AB number

Device identification – see nameplate:

Type of activity	Operating hours	carried out on	Name/ Signature

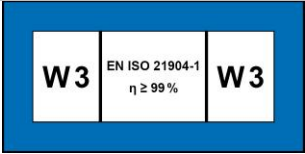
Tab. 53: Maintenance log

Note:

The maintenance log must be included with every customer complaint. Complaints cannot be processed without the necessary documentation.

7.4 Troubleshooting

Fault	Possible cause	Note
Motor protection switch has triggered	Current consumption too high due to voltage variations or fault in side channel blower	Have adjustment checked by a qualified electrician
		Contact service department
Fault in power supply	Polarity reversal error in electrical connection, phase breakdown	Check of the power supply by a qualified electrician
Dust collection container missing or open	Dust collection container not properly connected	Lift the dust collection container using the compressed air valve
Compressed air supply not available/insufficient	The compressed air supply is not sufficient or the compressed air maintenance unit is not correctly adjusted or the filter inserts are clogged	Check the compressed air supply and compressed air connections, required pressure 5–6 bar
Compressed air supply insufficient	Compressed air could not be provided at sufficient quantity or fast enough during filter cartridge cleaning	Check compressed air supply and compressed air connections
Error differential pressure sensor	The differential pressure sensor is defective or has wire breakage	Contact service department
Hissing of the product	Vacuum overflow valve has triggered Vacuum in suction area too high	Unblock ducting system, avoid abrupt closure
Product switches off	Side channel blower temperature too high See also the following:	Leave the product to cool for approx. 15 minutes, Check cooling air fan/filter
	Cooling air fan wrong direction of rotation	Check mains supply connection - check clockwise field of rotation
	Minimum volume flow too low	See chapter "Technical data"

		Open capture elements
	Suction pipe or exhaust pipe clogged or blocked	Clear blockage
	The negative pressure in the filter area is too high Emergency switch-off to protect the filter cartridges from destruction The set minimum extraction capacity is severely undercut Filter cartridges saturated	Filter replacement required/contact service Trigger level 2800 Pa differential pressure at the filter cartridges
Signal horn sounds	The vacuum in the suction pipe has fallen below the set value	 Requirements are no longer met!
	Filter inserts saturated	Replace filter inserts
	Number of open capture elements too high	Close capture elements
	Leak in the suction pipe or capture elements	Check suction pipe + capture elements for leaks
	Blockage in the exhaust pipe	Clear blockage

Tab. 54: Troubleshooting

NOTE

If the fault cannot be corrected by the customer, please contact the manufacturer's service department.

7.5 Emergency measures

In case of fire of the product or its detection elements, the following steps should be taken if necessary:

1. Disconnect the product from the mains! If present; pull out mains plug; set main switch to 0-position; disconnect supply fuses.
2. If present, disconnect the compressed air supply.
3. Fight fire with a commercially available dry powder extinguisher.
4. Notify local fire brigade if necessary.

⚠ WARNING

Do not open products with maintenance door. Flash flame formation!

In the event of a fire, do not touch the product under any circumstances without proper protective gloves. Risk of burns!

8 Disposal

⚠ WARNING

Skin contact with welding fumes, etc. can cause skin irritation in susceptible individuals.

Disassembly work on the product may only be carried out by trained and authorised personnel while complying with the safety rules and the applicable accident prevention regulations.

Serious injury to the lungs and respiratory tract is possible!

In order to avoid contact with and inhalation of dust particles, use protective clothing, gloves and a blower respirator system.

The release of hazardous dust particles must be avoided during dismantling work so that persons in the vicinity are not harmed.

⚠ CAUTION

All work on and with the product must comply with the legal obligations for waste avoidance and proper recycling/disposal.

8.1 Plastics

Plastics, if present, must be sorted as far as possible. Plastics must be disposed of in compliance with the legal requirements.

8.2 Metals

Metals, if present, must be separated and disposed of.
Disposal must be carried out by an authorised company.

8.3 Filter elements

Filter elements, if present, must be disposed of in compliance with the legal requirements.

9 Annex

9.1 EU Declaration of Conformity

Designation: Welding smoke filter unit
 Series: VacuFil 2000 - 4000
 Type: 82820, 82840 (possibly different article numbers for other product variants)
 Machine ID: (serial number) see the name plate on the product
 This product is developed, designed and manufactured in accordance with EC directives
 2006/42/EC – Machinery Directive

The product continues to comply with the provisions of the
 2014/30/EU - EMC Directive
 2014/29/EU - Pressure Equipment Directive
 2011/65/EU - RoHS Directive

Company: At the sole responsibility of
 KEMPER GmbH
 Von-Siemens-Str. 20, D-48691 Vreden

The following harmonised standards are used:

EN ISO 12100:2010 Safety of machinery - General principles for design
 EN ISO 13857:2019 Safety of machinery - Safety distances
 EN ISO 13854:2019 Safety of machinery - Minimum gaps
 EN ISO 21904-1:2020 Health and safety in welding and allied processes
 EN ISO 4414:2010 fluid power - General rules and safety requirements for systems and their components
 EN IEC 61000-6-2:2019 Electromagnetic compatibility (EMC) - Part 6-2: Generic standards - Immunity standard for industrial environments
 EN IEC 61000-6-4:2019 Electromagnetic compatibility (EMC) - Part 6-4: Generic standards - Emission standard for industrial environments
 EN 60204-1:2018 Safety of machinery - Electrical equipment of machines
 EN ISO 13849-1:2023 Safety of machinery - Safety-related parts of control systems

A complete list of standards, directives and specifications applied is available from the manufacturer. The operating manual belonging to the product is available.

Authorised representative:

Kemper GmbH, Von-Siemens-Str. 20, 48691 Vreden, Germany

The aforementioned person is authorised to compile the technical documentation in accordance with Annex VII of Directive 2006/42/EC.



Vreden, 26.02.2026

Place, date

B. KEMPER

CEO

Identification of the signatory

9.2 UKCA Declaration of Conformity

Designation: Welding fume filter unit
 Series: VacuFil 2000 - 4000
 Type: **82820, 82840** (possibly different article numbers for other product variants)
 Machine ID: (Serial number) see type plate on product
 This product is developed, designed and manufactured in accordance with the UKCA directives
 Supply of Machinery (safety) Regulations 2008

The product continues to comply with the provisions of the
 Electromagnetic Compatibility Regulations 2016
 Electrical Equipment (Safety) Regulations 2016
 Pressure Equipment Regulations 2016

At the sole responsibility of
 Company: **KEMPER GmbH**
 Von-Siemens-Str. 20, D-48691 Vreden

The following designated standards and technical specifications have been applied:

BS EN ISO 12100:2010 Safety of machinery - General principles for design
 BS EN ISO 13857:2019 Safety of machinery - Safety distances
 BS EN ISO 13854:2019 Safety of machinery
 BS EN ISO 21904-1:2020 Health and safety in welding and allied processes
 BS EN ISO 4414:2010 fluid power - General rules and safety requirements for systems and their components
 BS EN IEC 61000-6-2:2019 Electromagnetic compatibility (EMC) - Part 6-2: Generic standards - Immunity standard for industrial environments
 BS EN IEC 61000-6-4:2019 Electromagnetic compatibility (EMC) - Part 6-4: Generic standards - Emission standard for industrial environments
 BS EN 60204-1:2018 Safety of machinery - Electrical equipment of machines
 BS EN ISO 13849-1:2023 Safety of machinery - Safety-related parts of control systems
 BS EN IEC 63000:2018 Technical documentation for the assessment of electrical and electronic products with respect to the restriction of hazardous substances

A complete list of standards, directives and specifications applied is available from the manufacturer. The operating manual belonging to the product is available.
 Additional information:

UK Authorised Representative:
 United Kingdom KEMPER (U.K.) Ltd.
 Venture Court, 2 Debdale Road, Wellingborough, Northamptonshire NN8 5AA
 The above-mentioned person is authorized to compile the technical documentation in Schedule 2 of the Supply of Machinery (Safety) Regulations 2008.

Vreden, 26.02.2026

Place, date

B. Kemper



CEO

Identification of the signatory

9.3 Technical data

Designation	Type	
Filters	82820	82840
Filter stages	1	
Filter method	Cleanable filter	
Cleaning method	Rotating nozzle	
Filter surface m ² [ft ²]	10 [108]	
Number of filter elements	4	6
Total filter surface m ² [ft ²]	40 [431]	60 [646]
Type of filter	Filter cartridge	
Filter material	ePTFE membrane	
Filter efficiency ≥ %	99.9	
Welding fumes class	--	
Filter class/dust classification	M	
Basic data		
Maximum fan capacity m ³ /h [CFM]	2215 [1304]	4430 [2607]
Minimum extraction capacity m ³ /h [CFM]	100 [59]	200 [118]
Maximum extraction capacity m ³ /h [CFM]	2000 [1177]	4000 [2354]
Extraction capacity m ³ /h [CFM]	1525 [897]	3050 [1795]
At vacuum Pa [inch WC]	21,000 [84]	
Minimum extraction capacity (triggering threshold for volume flow monitoring) m ³ /h [CFM]	--	--
Motor power kW [hp]	22.0 [29.5]	45.0 [60.35]
Power supply/rated current/ Protection type/ISO class	See name plate	
Permissible ambient temperature (operation) °C [°F]	+5 to +40 [+4] to +104]	
Permissible ambient temperature outdoor (operation) °C [°F]	-10 to +40 [+14 to +104]	
Duty cycle %	100	
Noise level dB(A) at 50 Hz/10,000 Pa with air outlet silencer	72.0	73.3

Compressed air supply bar [PSI]	5 – 6 [73 – 87]	
Compressed air consumption NI/min [CFM]	240 [8]	
Compressed air class	2:4:2 ISO 8573-1	
Dimensions of the basic product	See Dimensions sheet	
Basic product weight kg [lbs]	1125 [2481]	1410 [3109]
Additional information		
Fan type	Side channel blower	
Maximum installation environment above sea level m (mean sea level metres) [ft]	1000 [3281]	

Table 55: Technical data – 82820, 82840

Required minimum volume flow diagrams

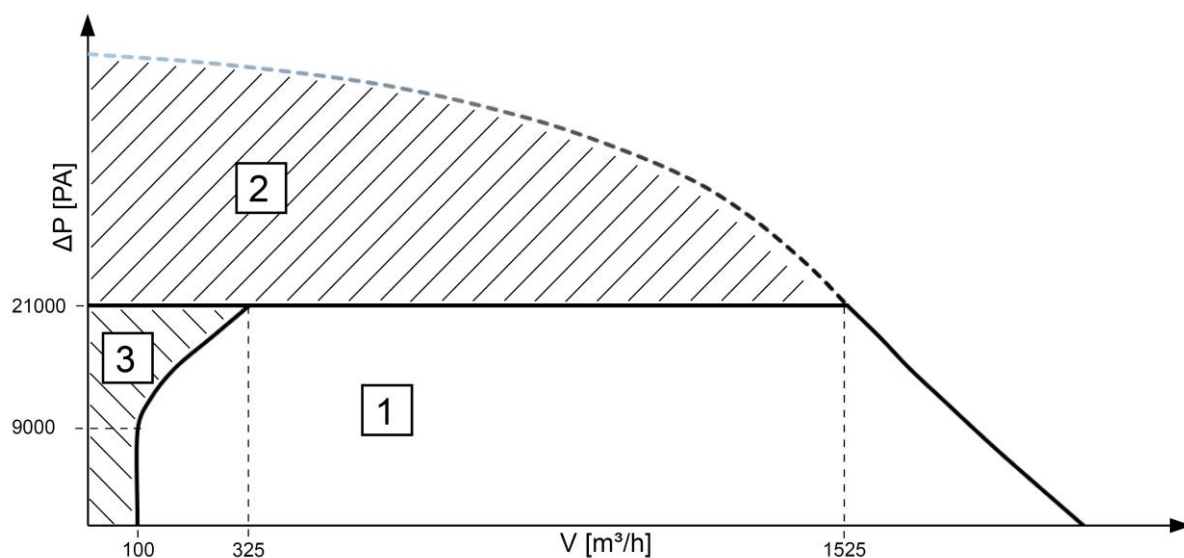


Fig. 57: Diagram - 82820

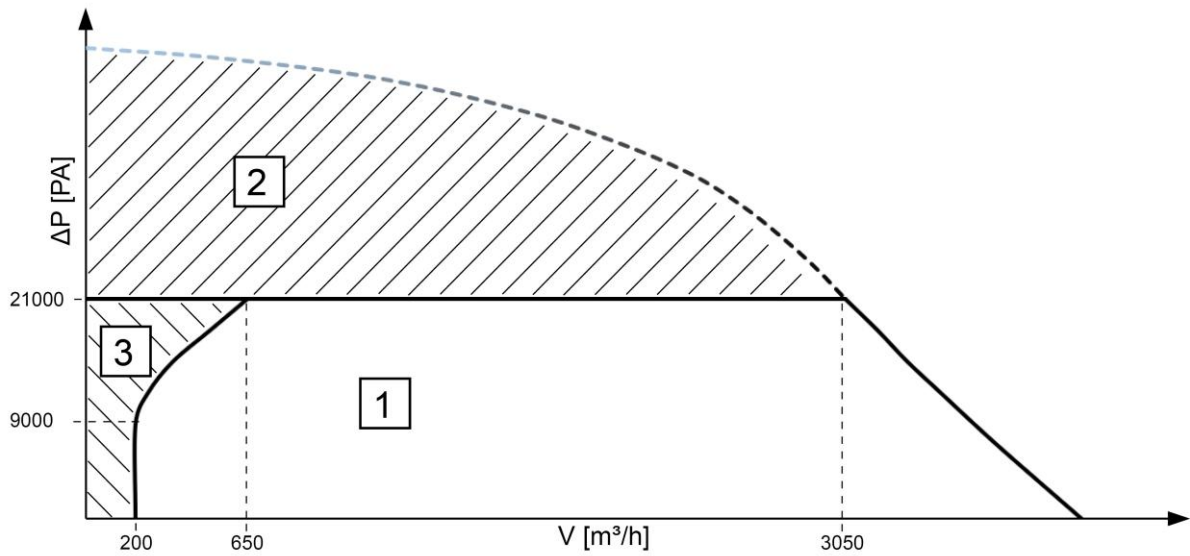


Fig. 58: Diagram - 82840

Pos.	Description	Note
1	Recommended working range	The volume flow should be in this range in relation to the vacuum.
2	Electronic control range	Adjustment of the vacuum by control.
3	Overheating range	Too little volume flow in relation to the vacuum. Overheating of the side channel blower is possible!

Table 56: Diagrams

9.4 Dimensions sheet

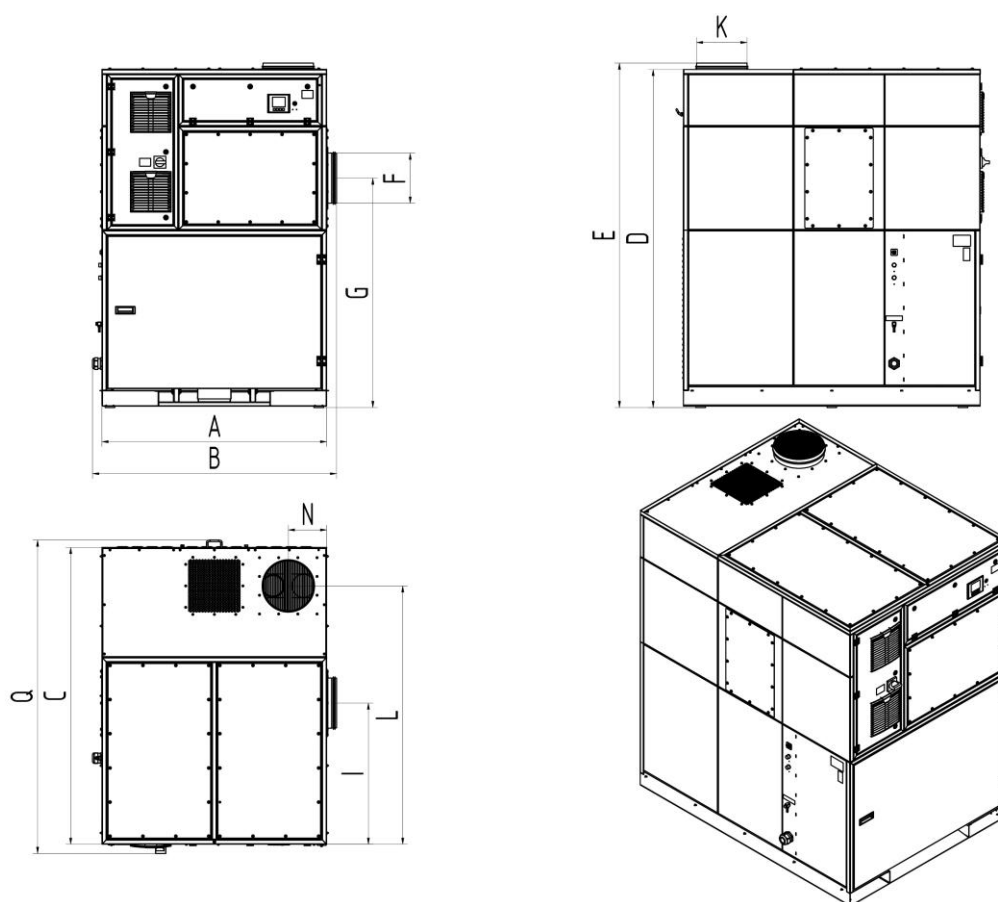


Fig. 59: Dimensions sheet

Symbol	Dimensions mm [in]	Symbol	Dimensions mm [in]
A	1413 [55.6]	G	1443 [56.8]
B	1534 [60.4]	I	888 [35.0]
C	1868 [73.5]	K	318 [12.5]
D	2127 [83.7]	L	1626 [64.0]
E	2167 [85.3]	N	241 [9.5]
F	315 [12.4]	Q	1972 [77.6]

Tab. 57: Dimensions table

9.5 Spare parts and accessories

Conse c. no.	Description	Pos. no.
1	Disposal bag (10 pcs.)	1190139
2	ePTFE filter cartridge 10 m ² incl. sealing ring	1090440
3	Extraction capacity regulation filter mat (5 pcs.)	1560026
4	Cooling air side channel blower filter mat (10 pcs.)	1090679

Tab. 58: Spare parts

Conse c. no.	Description	Pos. no.
1	Cooling air connection piece NW 315 mm	1131108
2	Silencer	On request
3	External on/off	On request
4	Spark pre-separator	On request

Tab. 59: Accessories - optional

Deutschland (HQ)**KEMPER GmbH**

Von-Siemens-Str. 20
D-48691 Vreden
Tel. +49 2564 68-0
Fax +49 2564 68-120
mail@kemper.eu
www.kemper.eu

United Kingdom**KEMPER (U.K.) Ltd.**

Venture Court
2 Debdale Road
Wellingborough
Northamptonshire NN8 5AA
Tel. +44 1327 872 909
Fax +44 1327 872 181
mail@kemper.co.uk
www.kemper.co.uk

France**KEMPER sàrl**

7 Avenue de l'Europe
F-67300 Schiltigheim
Si vous appelez de France
Tél. +33 800 91 18 32
Fax +33 800 91 90 89
De Belgique ou de l'étranger
Tél. +49 2564 68-135
Fax +49 2564 68-40135
mail@kemper.fr
www.kemper.fr

China**KEMPER China**

Floor 2, Building 6
No. 500 Huapu Road
Shanghai 201799
P.R. of China
Tel. +86 (21) 5924-0978
Fax +86 1852-1069-401
info@kemper-china.com.cn
www.kemper.cn.com

Ceská Republika**KEMPER spol. s r.o.**

Pyšelská 393
CZ-257 21 Porčí nad Sázavou
Tel. +420 317 798-000
Fax +420 317 798-888
mail@kemper.cz
www.kemper.cz

United States**KEMPER Fume****Extraction Systems LLC**

31465 Stephenson Hwy
Madison Heights
MI, 48071 USA
ph+1 (312) 815 5656
info@kemper-na.com
kemper-na.com

Canada**KEMPER Fume****Extraction Systems**

1-2, 1249 Seagrave Road
Woodstock, ON, N4T 0A8,
Canada
ph+1 (312) 815 5656
info@kemper-na.com
kemper-na.com

Nederland**KEMPER B.V.**

Demmersweg 92
Begane grond
7556 BN Hengelo
Tel. +49 2564 68-137
Fax +49 2564 68-120
mail@kemper.eu
www.kemper.eu

España**KEMPER IBÉRICA, S.L.**

Avda Diagonal, 421 3º
E-08008 Barcelona
Tel. +34 902 109-454
Fax +34 902 109-456
mail@kemper.es
www.kemper.es

India**KEMPER India**

55, Ground Floor, MP Mall
MP Block, Pitam Pura
New Delhi -110034
Tel. +91.11.42651472
mail@kemper-india.com
www.kemper-india.com

Polska**Kemper Sp. z o.o.**

ul. Grzybowska 87
00-844 Warszawa
Tel. +48 22 5310 681
Faks +48 22 5310 682
info@kemper.pl
www.kemper.pl

