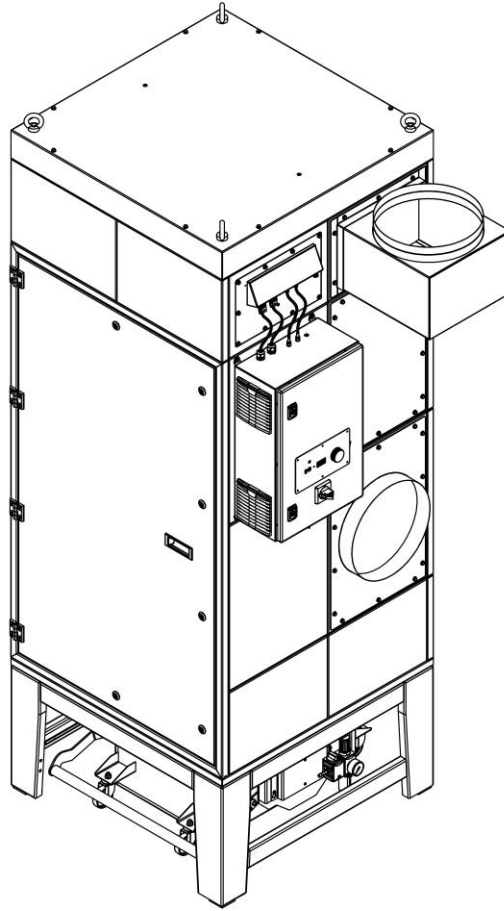


LaserFil - ArcFil - PlasmaFil



Automation Line

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

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.

Products with 16/ 32 Ampere – Plug

Category type:	Rated current	Tripping fault current	Note
Type B	40 A	30 mA	short time-delayed
Type B	63 A	30 mA	short time-delayed

Tab. 1: Requirements for residual current circuit breaker

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.

⚠ 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.

⚠ DANGER**Suspended loads – Transport crane lugs**

Tipping or falling loads lead to serious or even fatal injuries.

- The assembled product must not be transported as a complete unit on the crane lugs! (Crane eyelets can tear out)
- The components must be dismantled individually. These can then be reassembled at the new destination.
- Always stay outside the danger zone during transport.
- Observe the total weight, attachment points and centre of gravity of the load.

See also information on the product.



Fig. 1: Safety instructions on the product

⚠ 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.

⚠ 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 compact filter system which extracts and filters air containing pollutants, the properties of which are listed in the chapter "Intended Use".

The captured pollutants are also transported to the product in the air stream via a ducting system. The contaminated, polluted air flows past the baffle plates installed in the product. They protect the filter cartridges against coarse 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.

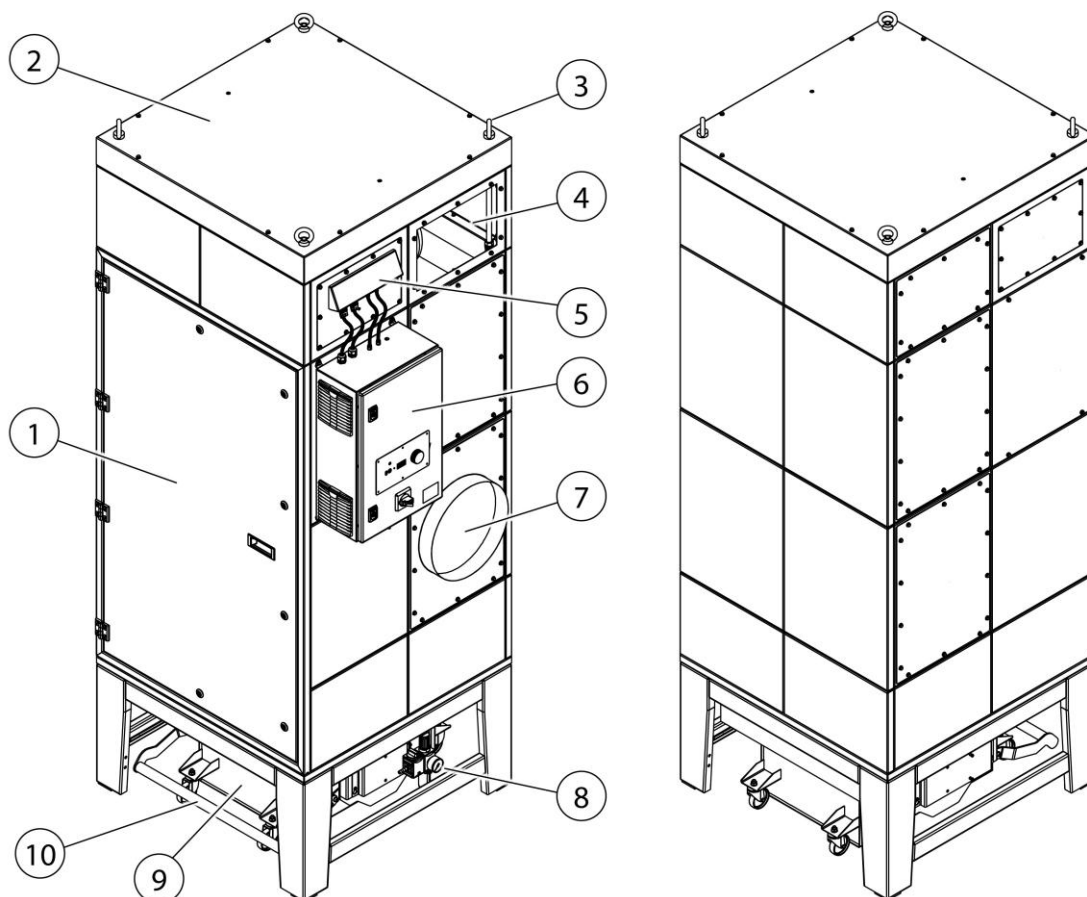


Fig. 2: Position on the product

Pos.	Description	Pos.	Description
1	Maintenance door filter area	6	Control cabinet
2	Cover plate	7	Raw air inlet
3	Crane lug / eyebolts	8	Compressed air maintenance unit
4	Clean air outlet	9	Dust collection trolley
5	Connection panel	10	Lifting device dust collection trolley

Tab. 2: Positions on the product

Optional attachment options

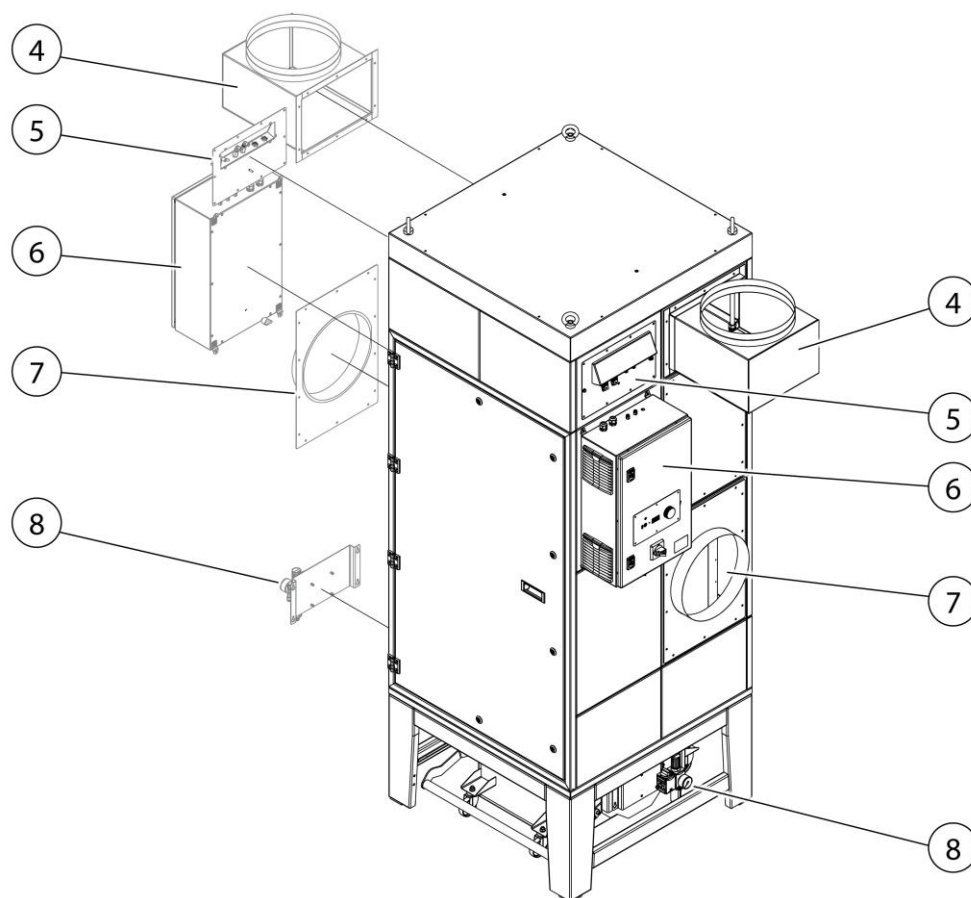


Fig. 3: Optional attachment options

Optional connection boxes for ducting systems

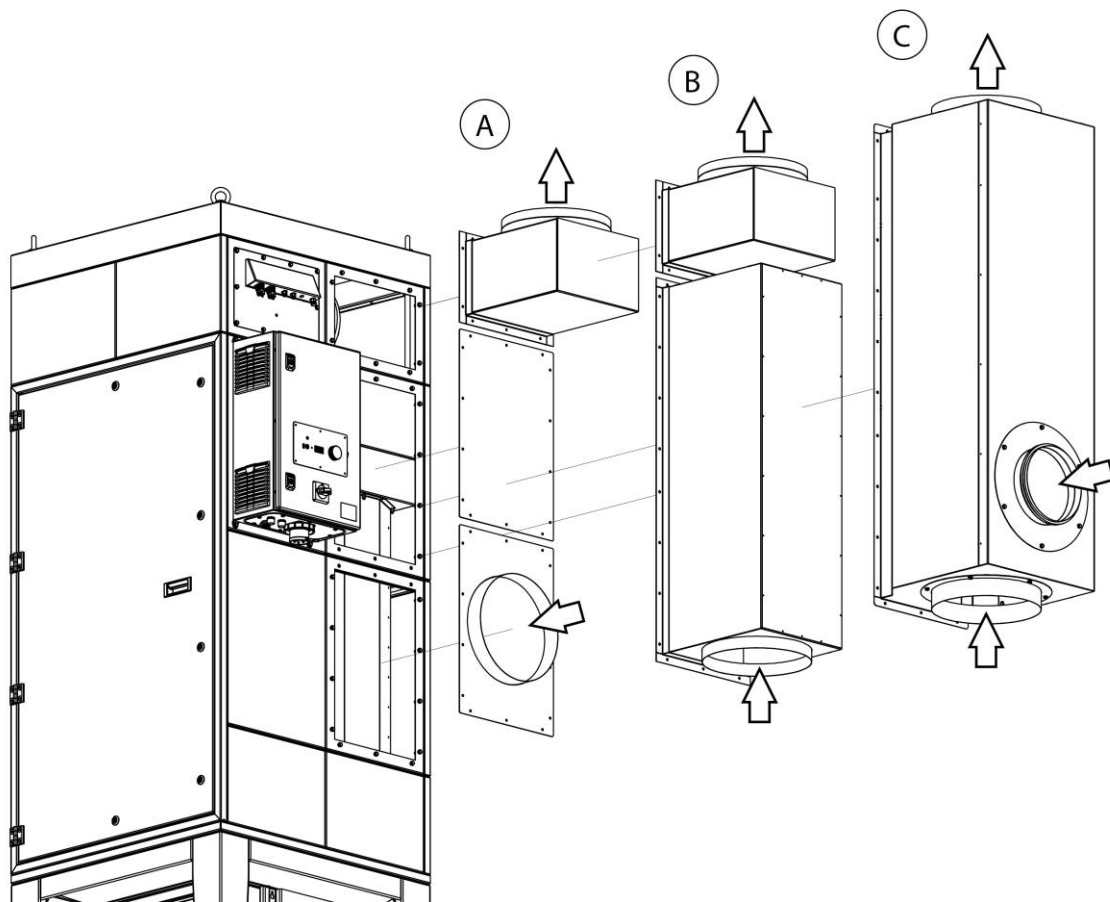


Fig. 4: Optional connection boxes

Pos.	Description	Pos.	Description
A	Duct connections + outlet box	C	Combination box (optional)
B	Intake box + outlet box (optional)		

Tab. 3: Optional connection boxes

3.2 Functional description of the control cabinet + control system

There are two control versions:

- Control without extraction capacity control – fan control via contactor/soft starter.
- Control with extraction capacity control (optional) - Fan control via frequency converter.

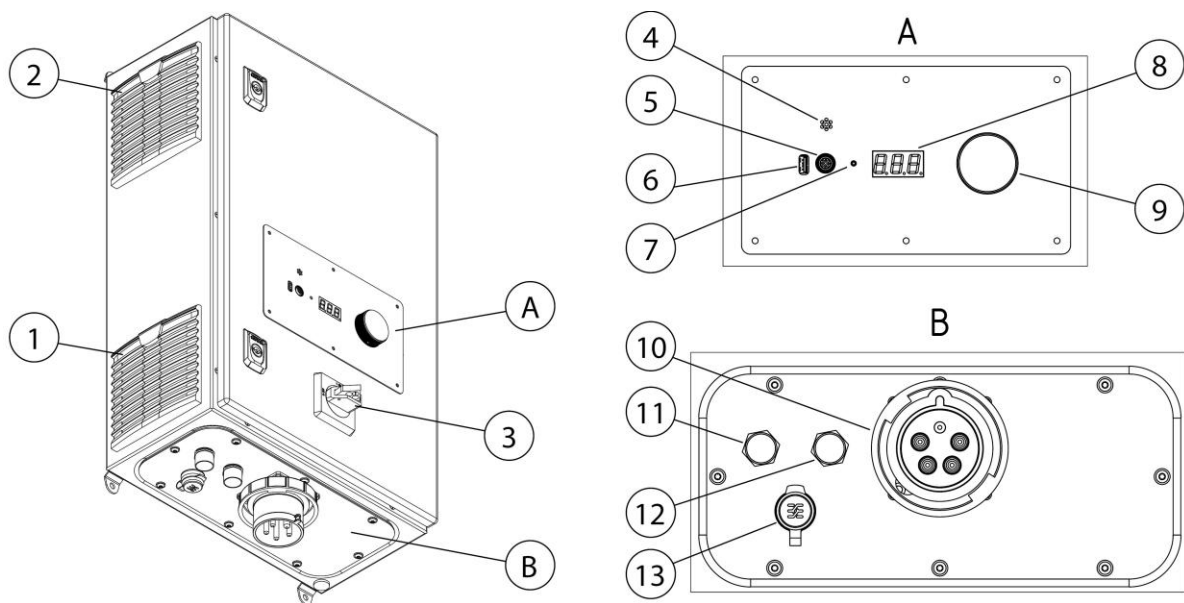


Fig. 5: Functional description of the control cabinet

Item	Description	Item	Description
1	Cooling air intake grating	A	Operating control
2	Cooling air outlet grating	B	Connection panel
3	Main switch		

Tab. 4: Functional description of the control cabinet

Item	Description	Item	Description
4	Signal horn	7	LED signal lamp
5	Connector socket for start-stop sensor	8	LED segment display
6	USB charging socket	9	Rotary switch

Tab. 5: Functional description of the operating control (Pos. A)

NOTE

For additional functions, see chapter on Operating Control

Item	Description	Item	Description
10	CEE connection socket (mains connection)	12	6-pin connection socket
11	12-pin connection socket	13	Network connection socket

Tab. 6: Functional description – connection panels (Pos. B)

3.3 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.

3.4 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.

3.5 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 7: 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

3.6 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.

3.7 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 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.

3.9 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.

Transport of the product with forklift or pallet truck:

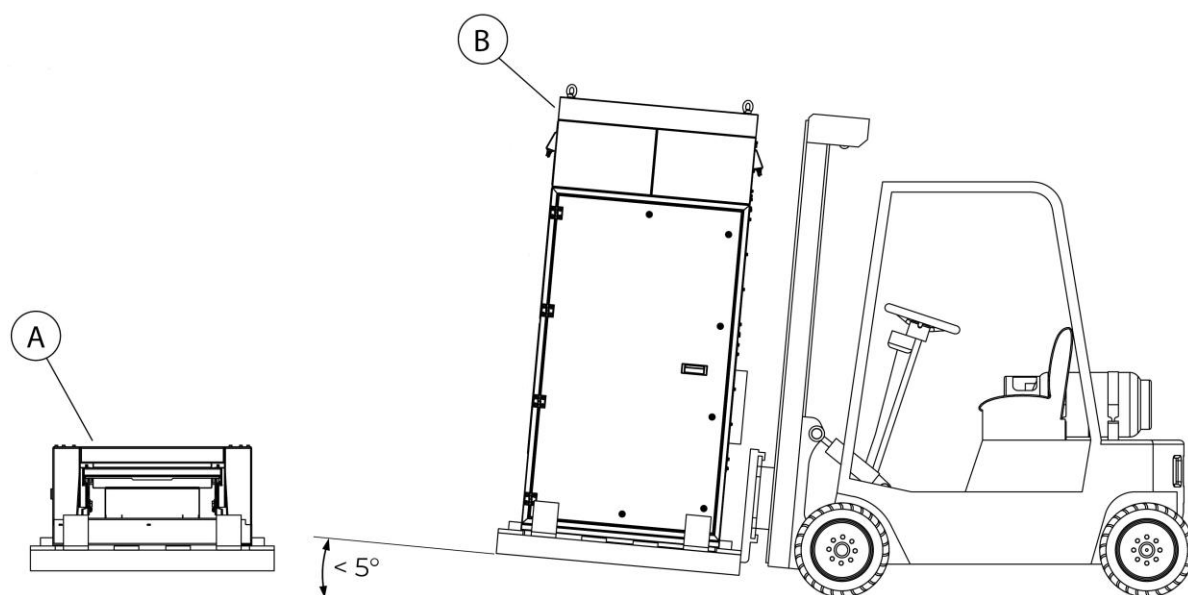


Fig. 6: Transporting the product

The product is delivered on two pallets. Use a suitable forklift or pallet truck to transport the product. During transport, ensure that the routes are stable and level.

Ensure that the product is straight during transport! The tilt angle must not exceed 5° .

Lifting the product with a crane / hoist

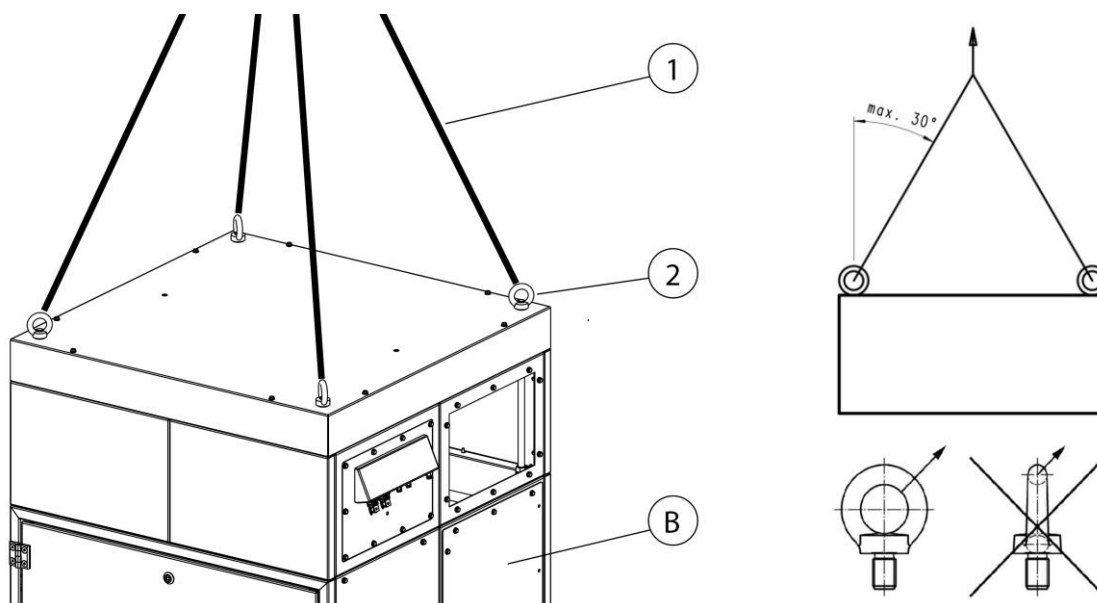


Fig. 7: Lifting the product with a crane / hoist

Item	Description	Item	Description
1	Hoist (on site)	2	Eyebolt / crane lug

Tab. 8: Lifting the product with a crane / hoist

4.3 Safety instructions for transporting the product

⚠ DANGER

- Potentially fatal crushing injuries when lifting and transporting the individual components of the product! Incorrect installation can cause components to fall down.
- Incorrect lifting and transport can cause the components of the product to tip over and fall down.
- The components of the product may only be lifted and transported with suitable lifting gear.
- Never stand under suspended loads or under improperly installed components.
- Lift and transport the individual components of the product with a single forklift only. The permissible load of the forklift must not be exceeded.
- Use suitable standard-compliant climbing aids and ensure that you are standing securely.
- Observe the applicable accident prevention and occupational safety regulations.
- Follow the instructions and regulations of the carrier.

The following safety instructions must be observed when transporting the product with a crane:

- Check that lifting gear is fixed firmly at the attachment points and on the crane hook.
- Attach the transport ropes to the crane hook in such a way that, when taut, they do not touch the machine parts lying above the attachment points.
- Use a loading harness if necessary.
- Adjust the lengths of the suspension cables so that the components of the product hang horizontally. Hook the suspension cables with shackles into all eyebolts/crane lugs. The angle of the suspension cables

to the vertical must not exceed 30° and the eyebolts/crane lugs must not be loaded laterally. The eyebolts/crane lugs must not be deformed and should not be subsequently colour-coded (especially red) due to the risk of confusion.

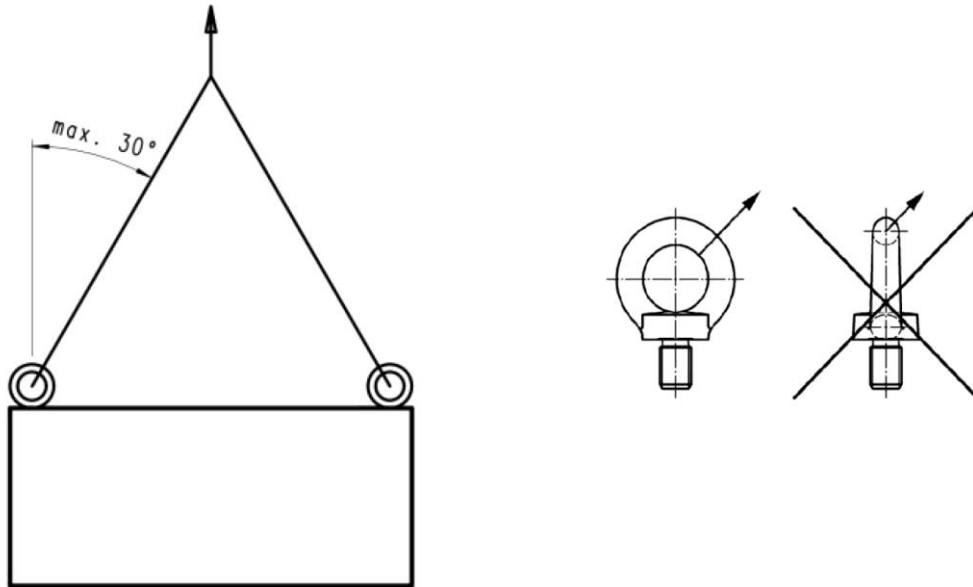


Fig. 8: Information on lifting procedure

- When choosing the shackle, ensure that each individual shackle has sufficient load capacity.

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

Depending on transport options, the product is delivered on one or two pallets.

⚠ WARNING

Danger of crushing!

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

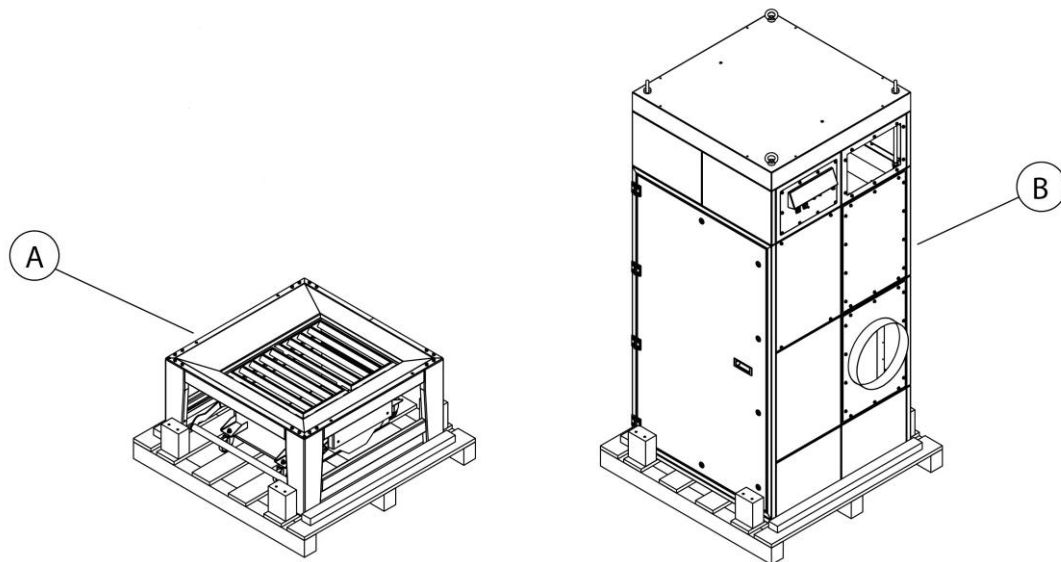


Fig. 9: Packing units

Pos.	Description	Pos.	Description
A	Lower part	B	Upper part

Tab. 9: Packaging the product

To mount the product, proceed as follows:

1. Remove the packaging film and the tensioning straps. Detach the product from the pallet.

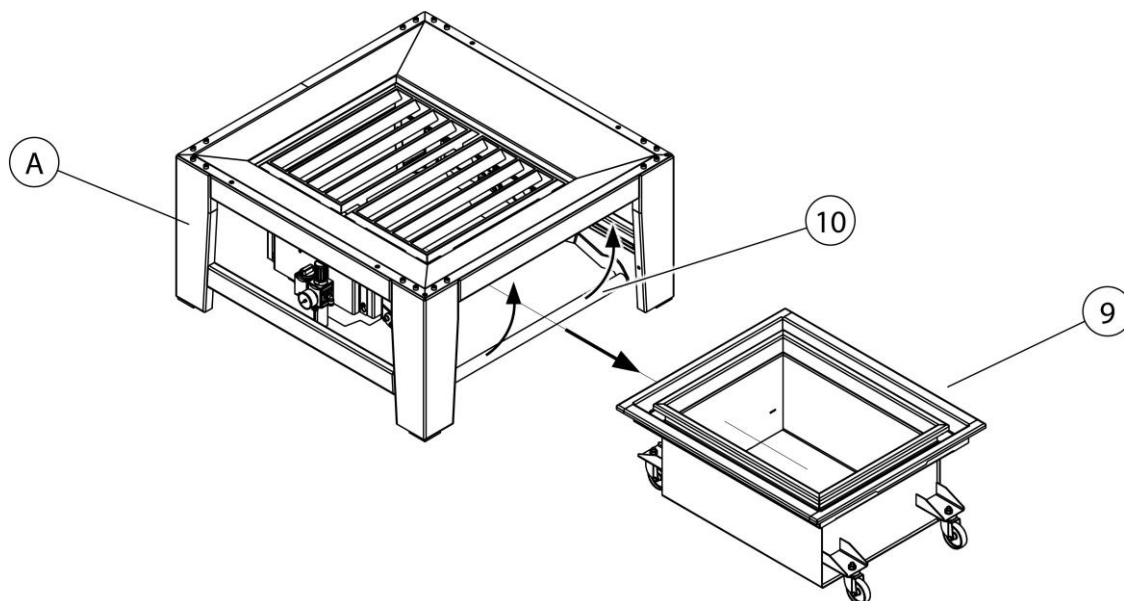


Fig. 10: Removing the dust collection trolley

Pos.	Description	Pos.	Description
A	Lower part	9	Dust collection trolley
		10	Lifting device dust collection trolley

Tab. 10: Removing the dust collection trolley

2. Remove the dust collection trolley (Pos. 9) from the lower part (Pos. A). To do so, pull up the handle of the hoist (Pos. 10) and pull out the dust collection trolley (Pos. 9).

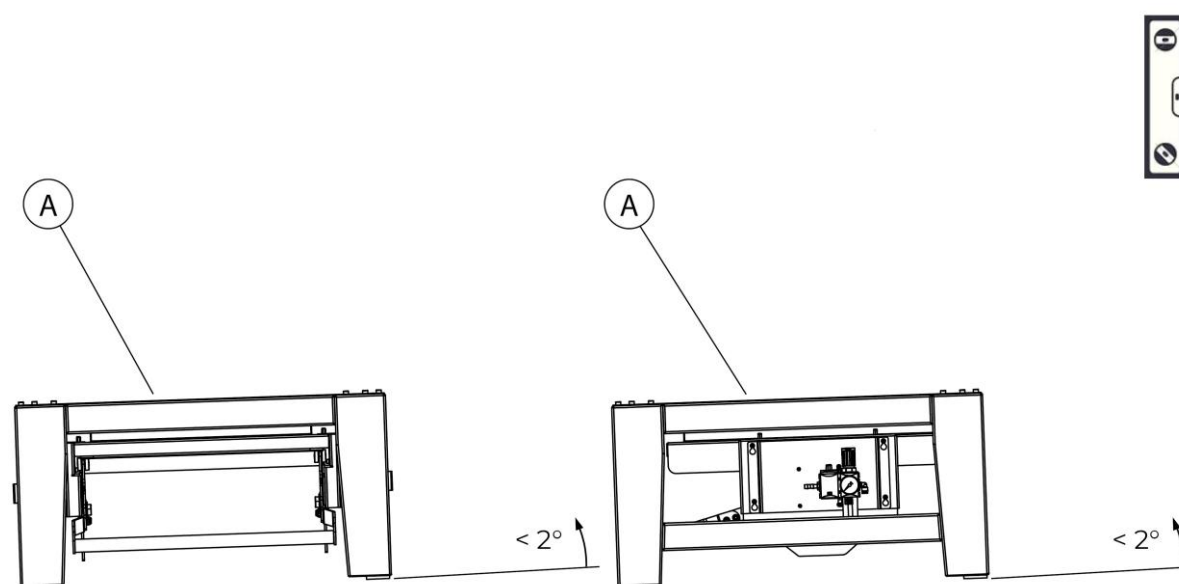


Fig. 11: Aligning the lower part

3. Deposit and align the lower part (Pos. A) at the installation site. It is recommended to fix it to the floor using ground anchors.

NOTE

The floor of the installation site must be straight and permanently load-bearing. The tilt angle must not exceed 2°.

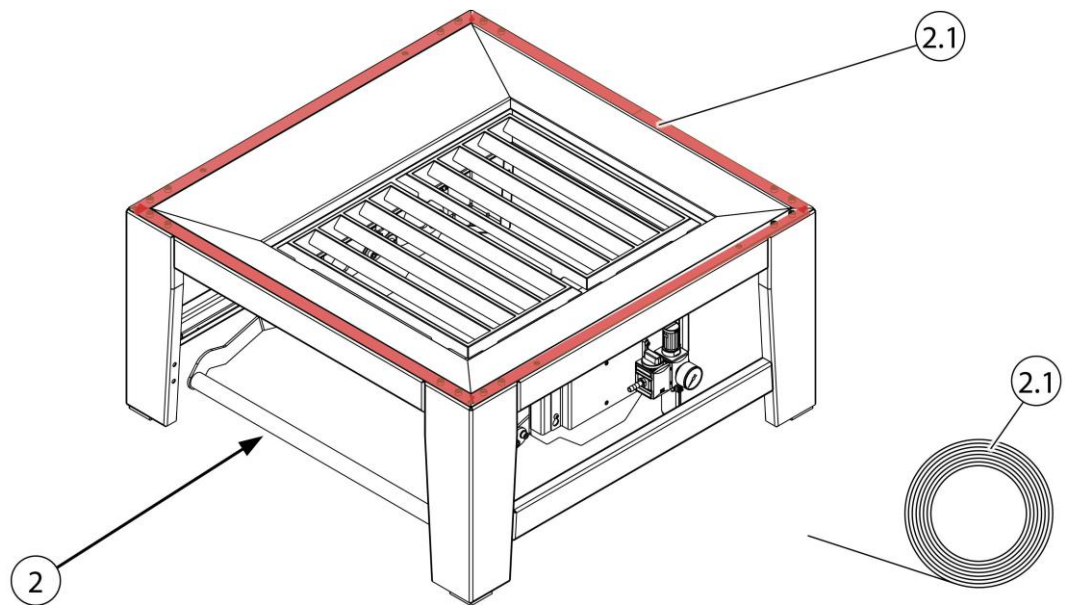


Fig. 12: Gluing the sealing surfaces

Pos.	Description	Pos.	Description
2	Insert dust collection container	2.1	Sealing tape

Tab. 11: Gluing the sealing surfaces

4. Apply the enclosed sealing tape (Pos. 2.1) circumferentially around the sealing surfaces.

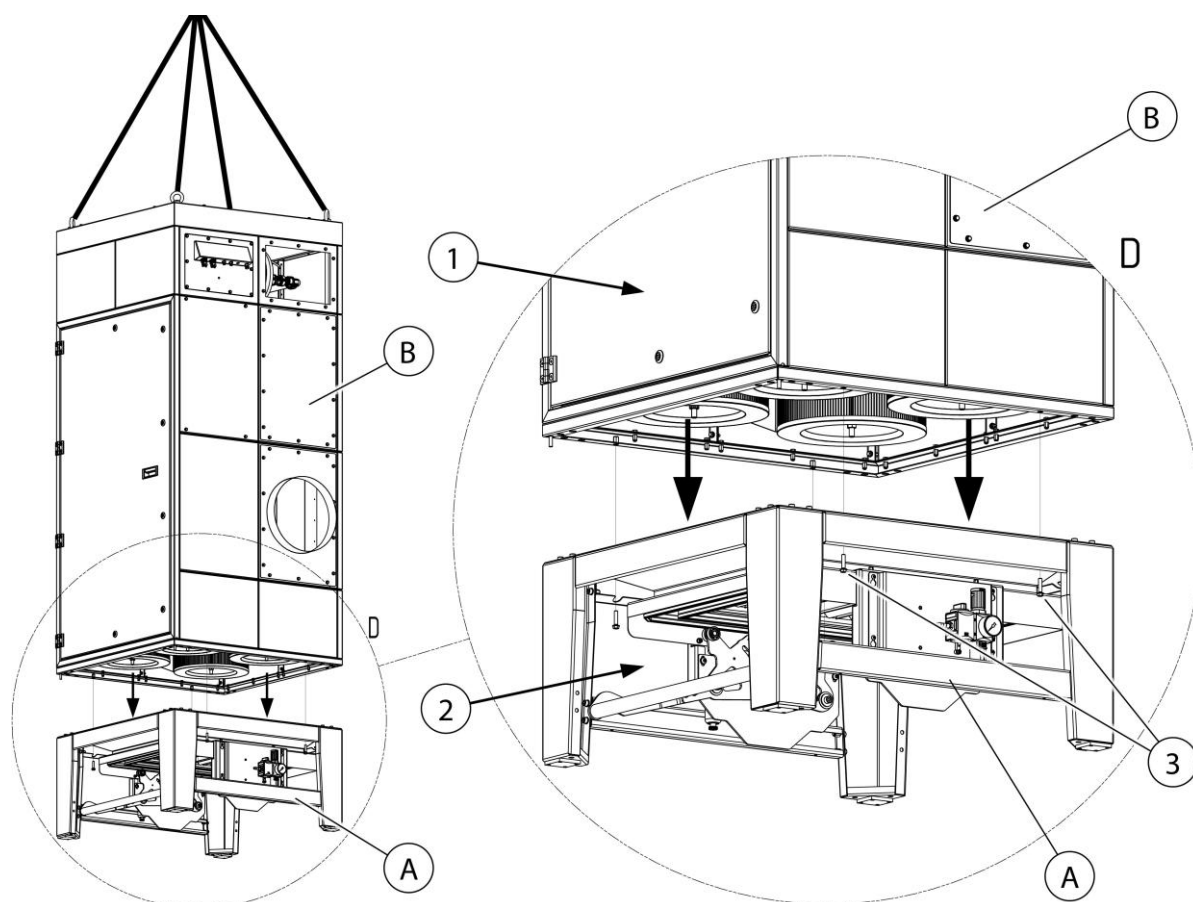


Fig. 13: Installation of the product

Pos.	Description	Pos.	Description
A	Lower part	1	Maintenance door
B	Upper part	2	Insert dust collection container
		3	Hex bolt (4 x)

Tab. 12: Installation of the product

5. Lift the upper part (Pos. B) from the pallet using a suitable hoist + carrying sling and place it on the lower part (Pos. A) as shown in the illustration.

NOTE

When depositing the upper part (Pos. B), ensure that the maintenance door (Pos. 1) and the insert of the dust collection trolley (Pos. 2) are positioned one above the other and are easily accessible.

6. Bolt the upper part (Pos. A) and the lower part (Pos. B) together, using the 4 x hex bolts (Pos. 3).

5.2 Assembly - Compressed air supply

After connecting the upper part to the lower part, the compressed air supply must be established. To do this, the enclosed compressed air hose must be routed from the lower part to the upper part.

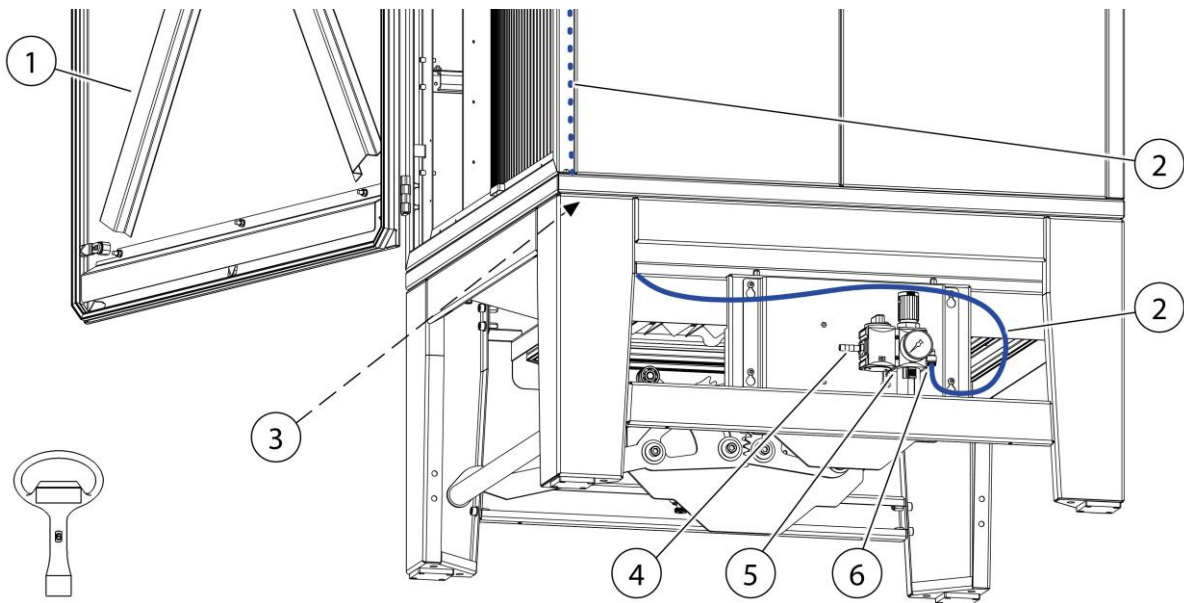


Fig. 14: Assembly - Compressed air supply

Pos.	Description	Pos.	Description
1	Maintenance door	4	Compressed air connection/ compressed air supply
2	Compressed air hose	5	Compressed air maintenance unit
3	Hose feed-through	6	Connecting piece for compressed air hose

Tab. 13: Assembly - Compressed air supply

Proceed to assemble the compressed air supply as follows:

1. Open the maintenance door (Pos. 1) with the square socket wrench.
2. Connect the compressed air hose (Pos. 2) to the connecting piece (Pos. 6).
3. Route the compressed air hose (Pos. 2) to the upper part. To do this, pull the compressed air hose (Pos. 2) through the hose feed-through (Pos. 3) from the lower part into the filter area of the upper part.

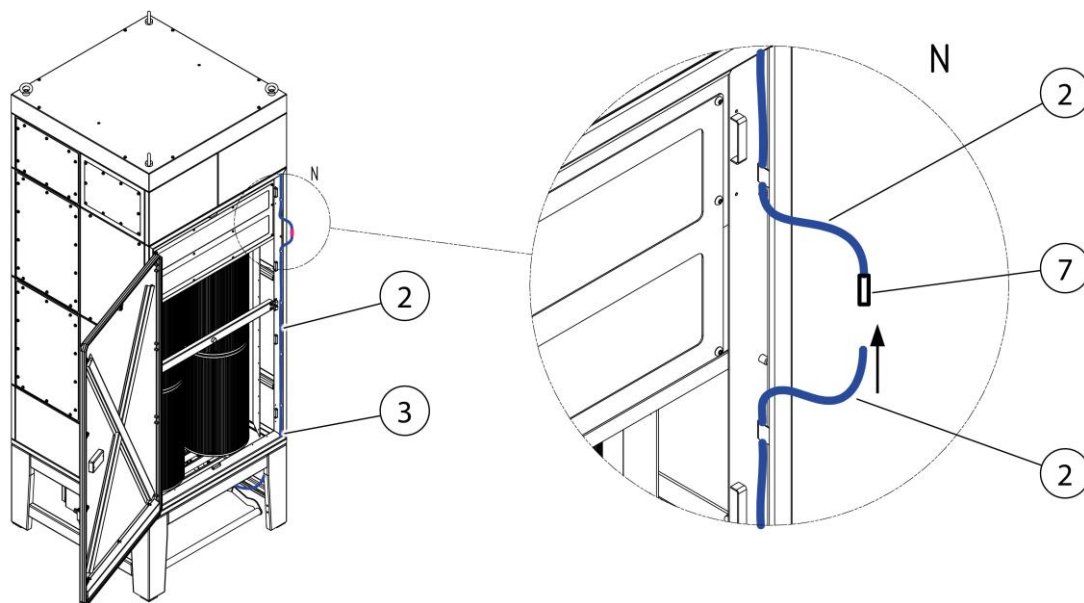


Fig. 15: Assembly - Laying the compressed air hose

Pos.	Description	Pos.	Description
2	Compressed air hose	7	Hose connector
3	Hose feed-through		

Tab. 14: Assembly - Laying and connecting the compressed air hose

4. As shown in the figure, pull the compressed air hose (Pos. 2) through the guides provided to the upper area of the filter component.
5. Connect the compressed air hose (Pos. 2) to the connector (Pos. 7) as shown in the figure. To do this, shorten the compressed air hose to the appropriate length beforehand.
6. Finally, fix the compressed air hose in place inside the frame of the lower part with cable ties.

5.3 Assembly - variations

The control cabinet, the connection panel and the connection boxes on the right-hand side are prepared at the factory.

Depending on local conditions, these attachments can also be fitted on the left-hand side as an option.

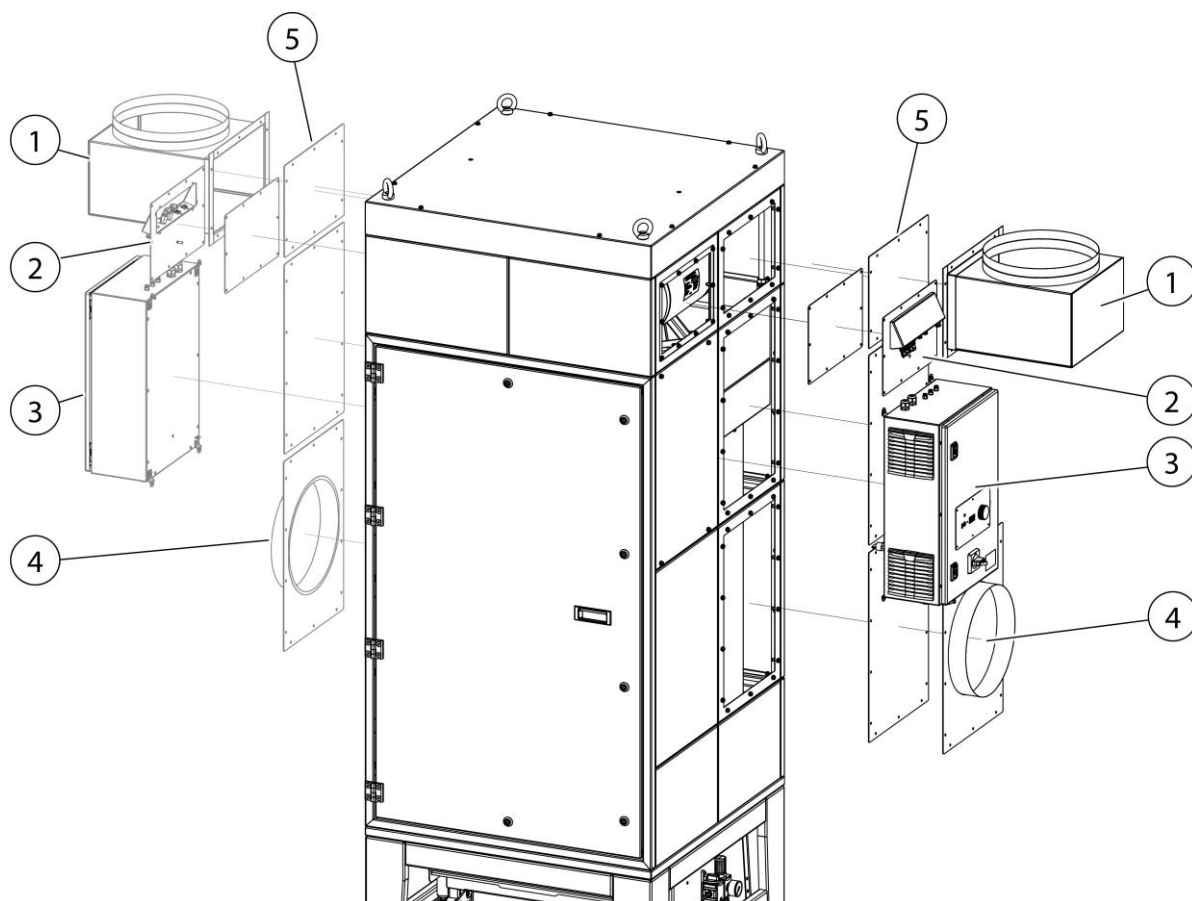


Fig. 16: Assembly - variations

5.4 Assembly - control cabinet

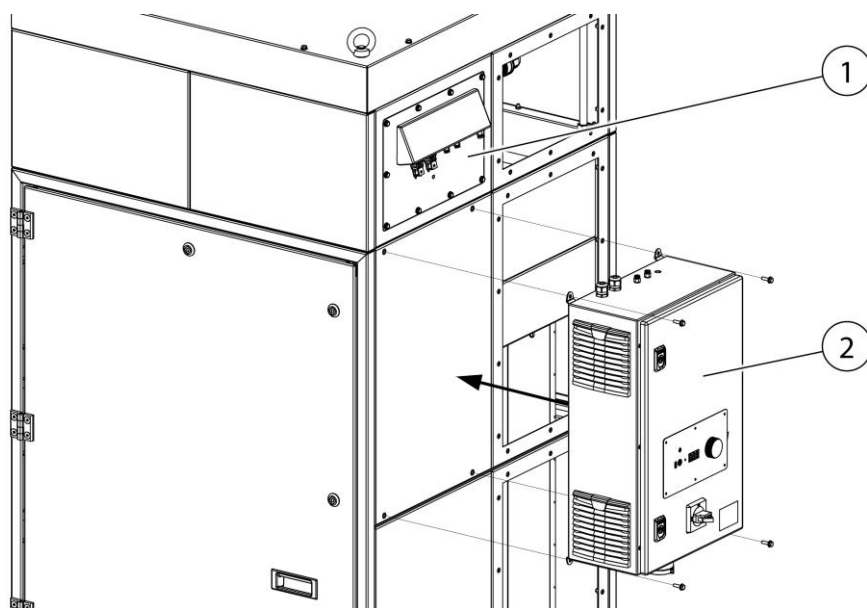


Fig. 17: Assembly - control cabinet

Pos.	Description	Pos.	Description
1	Connection panel	3	Control cabinet

Tab. 15: Assembly - control cabinet

Assemble the control cabinet as follows:

1. Open the control cabinet (Pos. 2) under the connection panels (Pos. 1) as shown in the illustration.

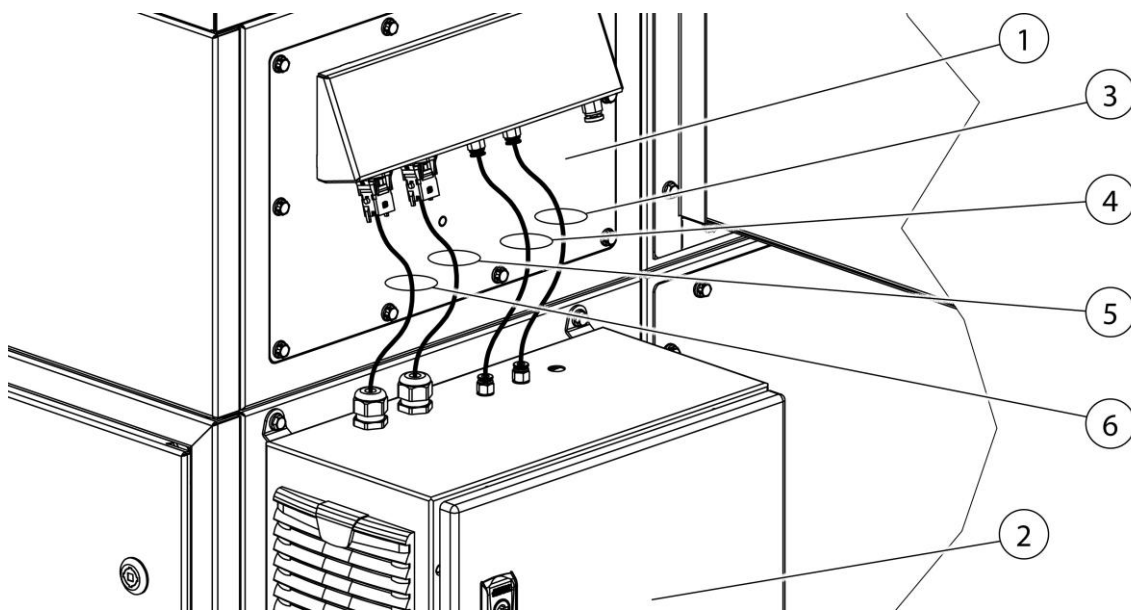


Fig. 18: Connecting the control cabinet

Pos.	Description	Pos.	Description
1	Connection panel	4	Measuring hose - raw air
2	Control cabinet	5	Control lead
3	Measuring hose - clean air	6	Motor lead

Tab. 16: Connecting the control cabinet

2. Connect the motor cable (Pos. 6) + control cable (Pos. 5) and the measuring hoses (Pos. 4+3) as shown in the illustration.

5.5 Assembly - connection boxes

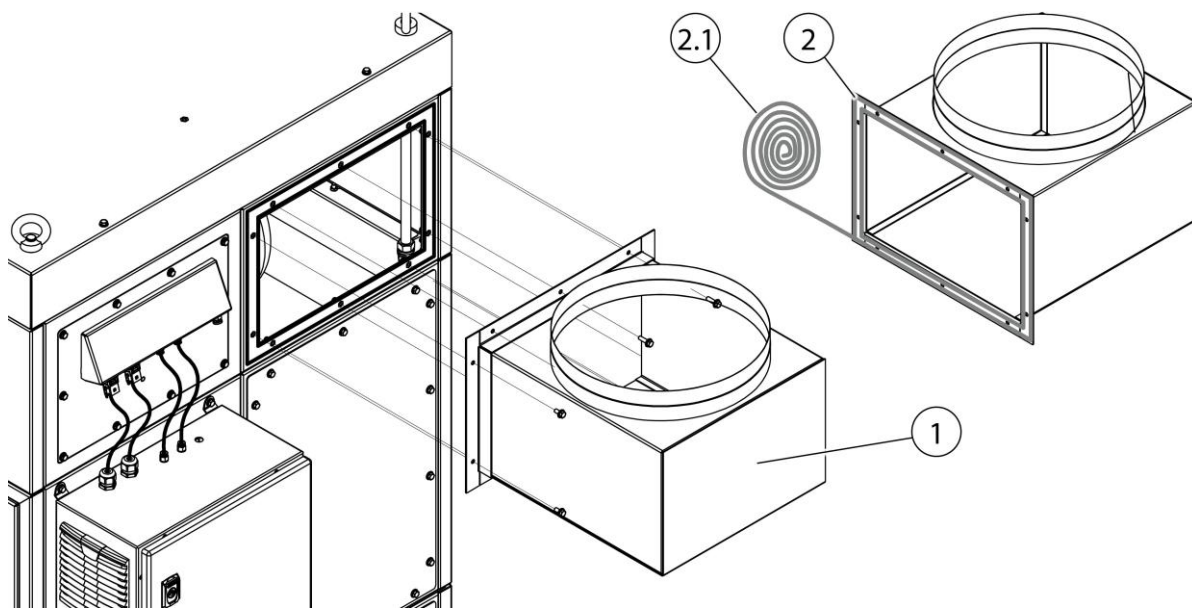


Fig. 19: Assembling the connection boxes

Pos.	Description	Pos.	Description
1	Outlet box – for connecting a piping system	2	Flange surfaces – connection box
		2.1	Sealing tape

Tab. 17: Assembling the connection boxes

Assemble the connection box(es) as follows:

1. Apply the enclosed sealing tape (Pos. 2.1) to the flange surfaces of the terminal box(es) (Pos. 2) all around the right and left sides of the flange holes.
2. Screw the connection box(es) (Pos. 1) to the product as shown in the illustration.

Assembling the optionally available connection boxes:

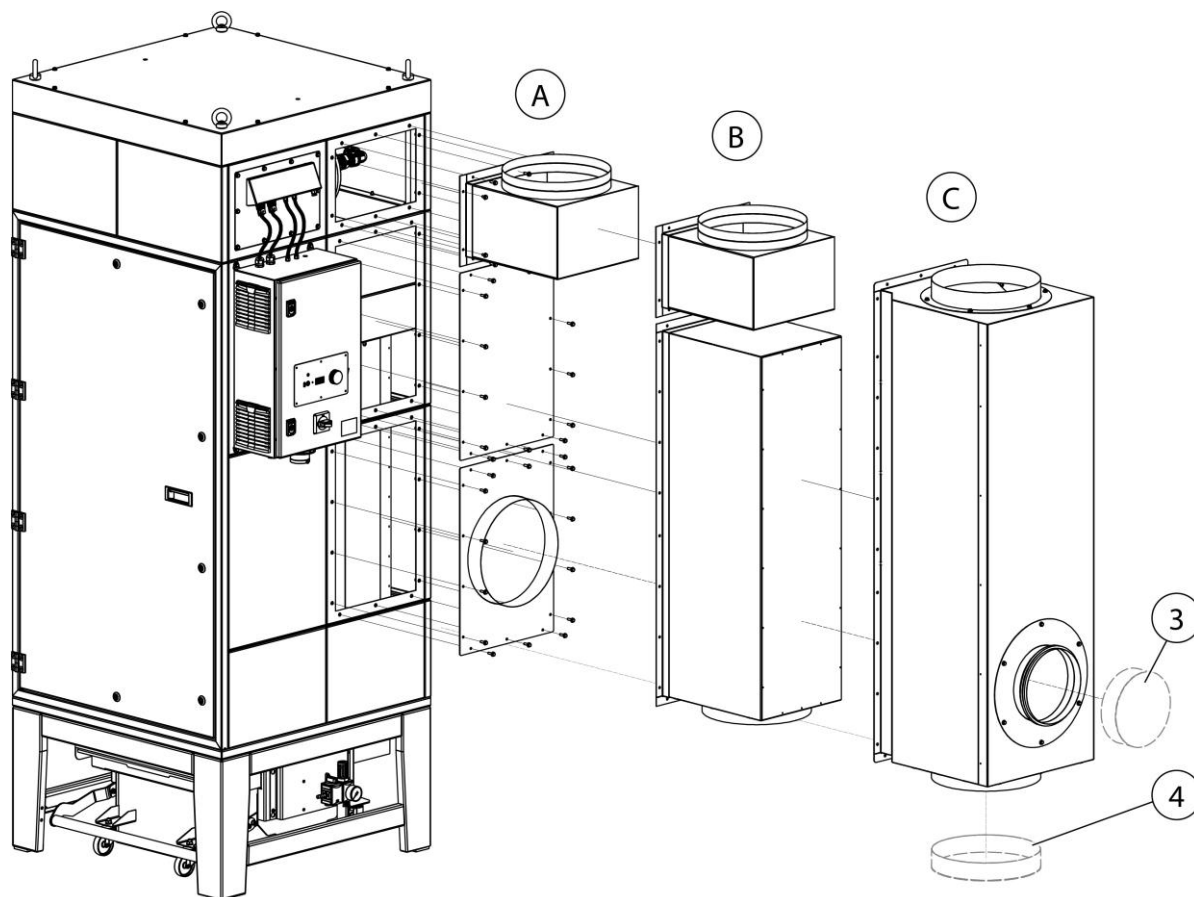


Fig. 20: Connection variations

Pos.	Description	Pos.	Description
A	Connection piece Ø 355 mm + outlet box Ø 355 mm	3	End cover Ø 250 mm (optional)
B	Intake box Ø 355 mm + outlet box Ø 355 mm	4	End cover Ø 355 mm (optional)
C	Combination box – Intake Ø 250/ 355 mm Outlet Ø 355 mm		

Tab. 18: Connection variations

5.6 Connecting the product

Connecting the power supply:

Now connect the product with a suitable CEE connector/cable. The CEE plug/cable are not included in the scope of delivery. When doing so,

ensure that the feed line is correctly fused and that the correct phase rotation direction has been selected.

- The phase sequence/direction of rotation of the fan must be checked before commissioning. If the direction of rotation is incorrect, the product is significantly louder and the extraction capacity is lower.
- If the direction of rotation is incorrect, two phases must be swapped in the CEE plug by a qualified electrician.

Connecting the compressed air supply:

- The required compressed air supply is connected to the compressed air maintenance unit in the lower part of the product. The required compressed air hose is not included in the product's scope of supply.
- For the required pressure, compressed air requirement and compressed air class, see chapter on Technical data.

NOTE

The product may only be operated with a dust collection bag inserted.

5.7 Electrical connection of the product

Connecting the power supply:

- Now connect the product with a suitable connecting cable. The connecting cable is not included in the scope of supply. The selection of the connecting cable and the pre-fusing must be specified by the customer.
- The phase sequence/direction of rotation of the fan must be checked before commissioning.
- If the direction of rotation is incorrect, two phases must be swapped in the CEE plug by a qualified electrician.

CEE – Plug/socket	Required connecting cable	Circuit breaker
	Up to 25 metres	Category C
32 A	5x6 mm ²	3x32 A

Tab. 19: Connecting the product

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 controls

Operating controls and connection options are located on the front side of the product:

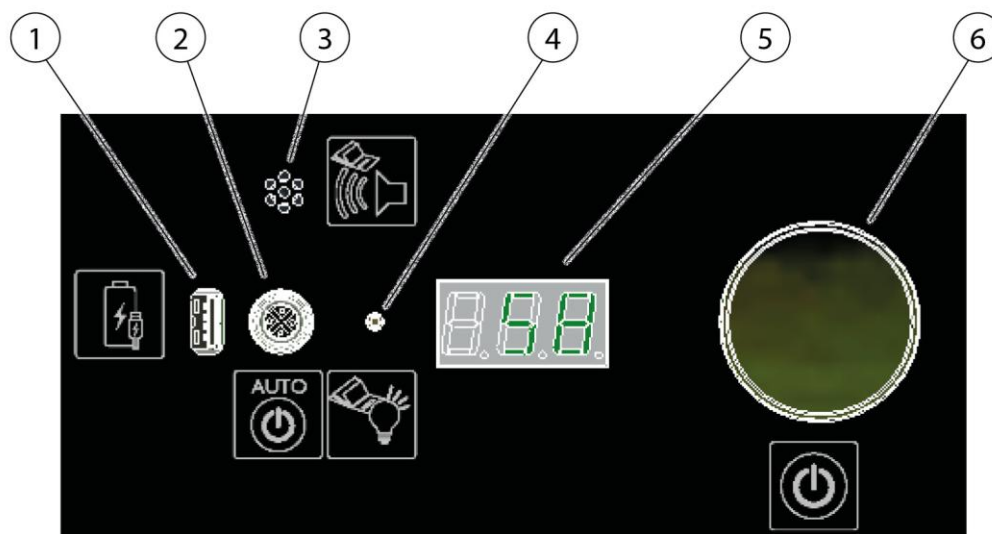


Fig. 21: Operating controls

Pos.	Description	Note
1	USB charging socket	For charging commercially available USB devices
2	Signal horn	See also chapter "Troubleshooting"
		
3	LED status signal light	Indicates the current operating status
4	LED segment display	Indicates settings, parameters, performance values, notes and faults
5	Rotary switch	Switches the product on or off
		Settings and queries can be carried out by turning and pressing the buttons

Tab. 20: Operating controls

6.2.1 Basic functions

Two control versions are available:

- **With frequency inverter**
- **Without frequency inverter (with contactor or soft starter)**

Interfaces:

6-pin socket: External on/off, operating and fault messages

12-pin socket: Optional extensions

M8 socket: External components (e.g. display, IoT module)

Device memory:

The following data is stored in the controller.

- Operating hours
- Remaining time until maintenance
- Number of filter cleaning processes

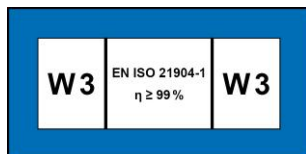
Filter cleaning and compressed air:

Filter cleaning starts at a differential pressure of >1000 Pa during operation.

A compressed air supply is essential and is monitored via a pressure switch.

Signal horn (Pos. 3) - (only if product is IFA-tested)

If the required volume flow is not achieved, a warning signal sounds after 5 minutes and "A05" appears on the LED segment display. The LED status signal light flashes in magenta during this message.

NOTE

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.

If the integrated cleaning system is no longer sufficient, a filter change is required or the optional cleaning system must be started.

The same happens if the extraction capacity is reduced too much by closing the extraction hose.

A remedy is to check for blockages.

LED status signal lamp (Pos. 4)

Signal colours are:

Green – indicates trouble-free operation

White – Menu – Queries and settings

Magenta – indicates one or more warnings (see "Troubleshooting" chapter)

Red – indicates a fault (see "Troubleshooting" chapter)

LED segment display (Pos. 5)

The digital LED display indicates all settings, parameters and performance values, as well as possible faults and information.

The digital LED display shows [O F F] when switched off.

Rotary switch – Switching the product on / off (Pos. 6)

The rotary switch is used for all menu queries and settings.

- Turn = select, enter
- Press = confirm, acknowledge

As soon as the rotary switch (Pos. 6) is briefly pressed, the product starts and the digital LED display switches to [O N]. In fault-free operation, the status LED lights up green.

Pressing the rotary switch again switches the product off.

After the start-up process, the desired extraction capacity can be set as desired on the rotary switch (Pos. 6).

6.2.2 Menu – Queries and settings

As soon as the rotary switch (Pos. 6) is pressed for approx. 3 seconds, the setting and query menu opens. The LED signal lamp (Pos. 4) lights up white.

In the menu, it is possible to switch between the menu items by turning the rotary switch (Pos. 6). Briefly press to display the value of the respective menu item.

LED segment display	Description 1	Description 2	Setting value
DEL	Delay	Automatic start-stop run-on time	Yes
OPH	Operating hours	Operating hours	
HUS	Hours Until Service	Hours until maintenance	
dP	delta P	Differential pressure of the filter (kPA)	
tP	torch Pressure	Extraction pipe vacuum (kPA)	
CLE	Cleaning processes	Number of cleaning processes	
rEg	regulation	Vacuum target value (for FI systems only)	Yes
US	1 = US, 0 = Metr.	Displayed units; Metric or US	
FR	Frequency	Motor frequency/motor speed (for FI systems only)	
Cur	Current	Motor current in A (only for extraction capacity regulation)	
P	Power	Motor power in KW (only for extraction capacity regulation)	
FCC	Filter Cleaning Counter	Number of post-cleaning processes	
Fil	Filter	Number of installed filters	
PFC	Pressure Filter Cleanings	Cleaning start in kPa	
SEC	Service code	Service codes	Yes

Tab. 21: Menu

6.2.3 Setting the extraction capacity regulation

Product without extraction capacity regulation:

In the standard product without extraction capacity regulation, the fan always runs at nominal speed. It is not possible to regulate the fan speed and therefore the extraction capacity.

At the extraction point, the volume flow must be regulated by a butterfly valve, if necessary.

Product with automatic extraction capacity regulation:

The extraction capacity regulation monitors the set extraction capacity constantly. If the extraction capacity drops, e.g. when the filter is saturated, the control automatically regulates the speed of the fan so that the set extraction capacity is always guaranteed at the extraction point.

6.2.4 Activation codes

Advanced functions can be activated by entering activation codes.

Activation codes can be entered a maximum of 5 times in succession. A correct code is signalled by green flashing, an incorrect code by red flashing of the signal lamp (Pos. 4). If an incorrect code has been entered 5 times in succession, the code entry is blocked for 60 seconds. The menu item "SEC" cannot be activated then. Any further incorrect entry will then lock it again for 60 seconds.

6.2.5 Displaying the product ID

The product ID is located on the name plate or can be called up on the operating control.

To do this, hold down the rotary button (Pos. 6) for more than 5 seconds.

The product ID is required, for example, to enter activation codes.

6.2.6 External control of the product

A 6-pin socket for external control is located on the underside of the switch box.

This socket can be used to do the following on the product:

- Switch on and off externally.
- Query for operating and fault messages.

Activating the external on/off function.

The external on/off function must be activated by the manufacturer. To do this, send the product ID to the manufacturer. The manufacturer generates the required activation code.

6.2.7 Cleaning the filters

If a differential pressure of more than 1000 Pa occurs on the filter cartridge, filter cartridge cleaning is automatically triggered during operation. All cartridges are cleaned one after the other with a pause of 45 seconds. Post-cleaning is carried out once the system is switched off. "CLE" is shown in the LED segment display during the cleaning cycle.

6.2.8 One-time pre-coating of the filters

For filters **without** a PTFE membrane, a one-time pre-treatment of the filter surface is required, whereby a pre-coating agent is applied once to the filter surface.

Activation of the pre-coating mode:

The pre-coating mode is activated with code **995**. After entering, the system cleans for the first time at a differential pressure of **1500 Pa**. Afterwards, filter cleaning is carried out regularly at **1000 Pa**.

Re-activation after a filter change

After a filter change, the code **995** must be entered twice to restart the pre-coating mode.

6.3 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 LED segment display signals the operating status [O N].
5. Fault-free operation is signalled by the green LED status signal light.

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

6.4 One-time pre-treatment of the filter cartridges

For filters **without** PTFE membrane, a one-time pre-treatment of the filter surface is required, whereby a pre-coating agent is applied once to the filter surface.

The pre-coating agent is suctioned in with the intake air flow of the filter system, which causes the agent to settle on the filter surface.

The dosing quantity of the pre-coating agent depends on the total filter surface of the installed filter cartridges.

Dosing quantity	Filter surface
100 g	10 m ²
1000 g	100 m ²

Tab. 22: Dosing quantity

Apply the pre-coating agent as follows:

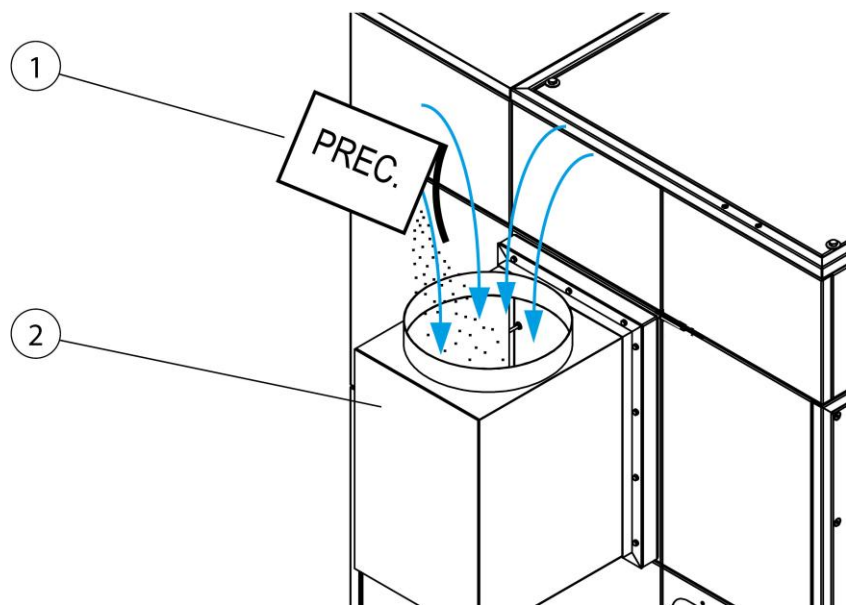


Fig. 22: Applying the pre-coating agent - example illustration

Item	Description	Item	Description
1	Pre-coating agent	2	Intake box

Tab. 23: Applying the pre-coating agent

1. Switch on the filter system so that the fan runs at nominal speed.
2. According to the figure, slowly pour the pre-coating agent (item 1) into the air stream of the connection box (item 2).
3. Switch off the filter system and install the on-site piping system on the connection box. The filter system is now ready for operation.

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 Daily checks before starting work

Test	Instructions
Check the connection cable and plug (if present) for damage	If necessary, inform a qualified electrician
Check the connected ducting system for leaks	Mend or replace any damaged parts
Check the fill level of the dust collection container (if present).	See "Maintenance" chapter
Check the maintenance doors/maintenance covers for leaks	Have any defective seals replaced
Check the filter(s) for damage (filter breakthrough)	Visually check if smoke is coming out of the clean air outlet during the welding process or if dust deposits are visible in the area of the clean air outlet.

Tab. 24: Daily checks

⚠ WARNING

Health hazard due to welding fumes

If the filter surface is damaged (filter breakthrough), the filtration of the air containing pollutants is no longer given. Operation of the product must be stopped immediately.

A filter change is required. See chapter Changing Filters

7.3.1 Emptying the dust collection container

The dust collection container fill level must be checked at regular intervals. The time period in which the dust collection bucket/disposal bag must be

changed depends on the type and quantity of use of the separated 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 50 mm below the top lip of the dust collection container.

⚠ 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.

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

1. Switch off the product using the I/O pushbutton.
2. Wait two minutes for the dust particles to settle inside the filter section.
3. Have a new disposal bag ready.

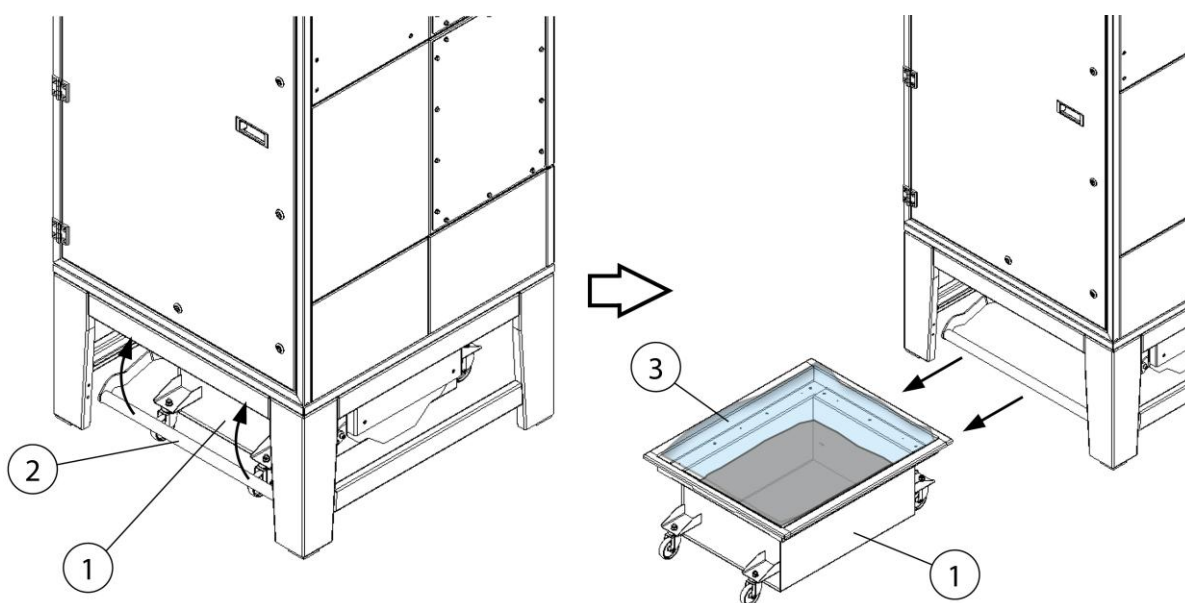


Fig. 23: Maintenance – Emptying the dust collection container

Item	Description	Item	Description
1	Dust collection trolley	3	Disposal bag

2	Lever – lifting device		
---	------------------------	--	--

Tab. 25: Maintenance – Emptying the dust collection container

4. Unlock / lower the dust collection container (Pos. 1) by pulling the lever of the lifting device (Pos. 2) upwards.
5. Carefully pull the dust collection trolley off the lifting device without raising dust particles.

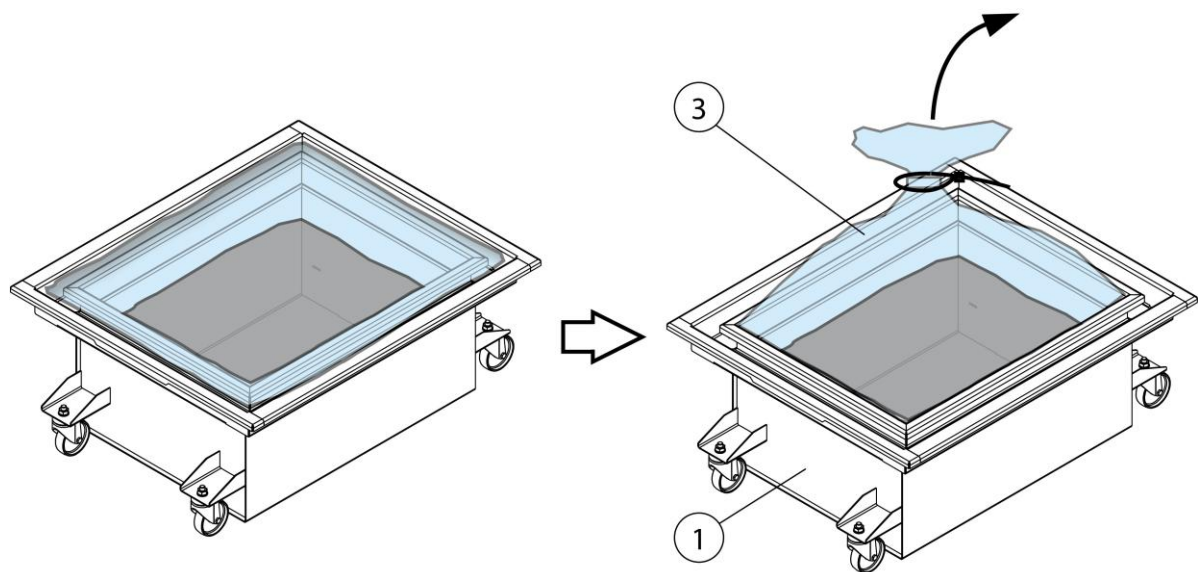


Fig. 24: Maintenance – Emptying the dust collection container

6. Seal the disposal bag (Pos. 3) airtight using a cable tie.
7. Remove the disposal bag (Pos. 3) from the dust collection trolley (Pos. 1) and dispose of it according to regulations.

⚠ WARNING

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

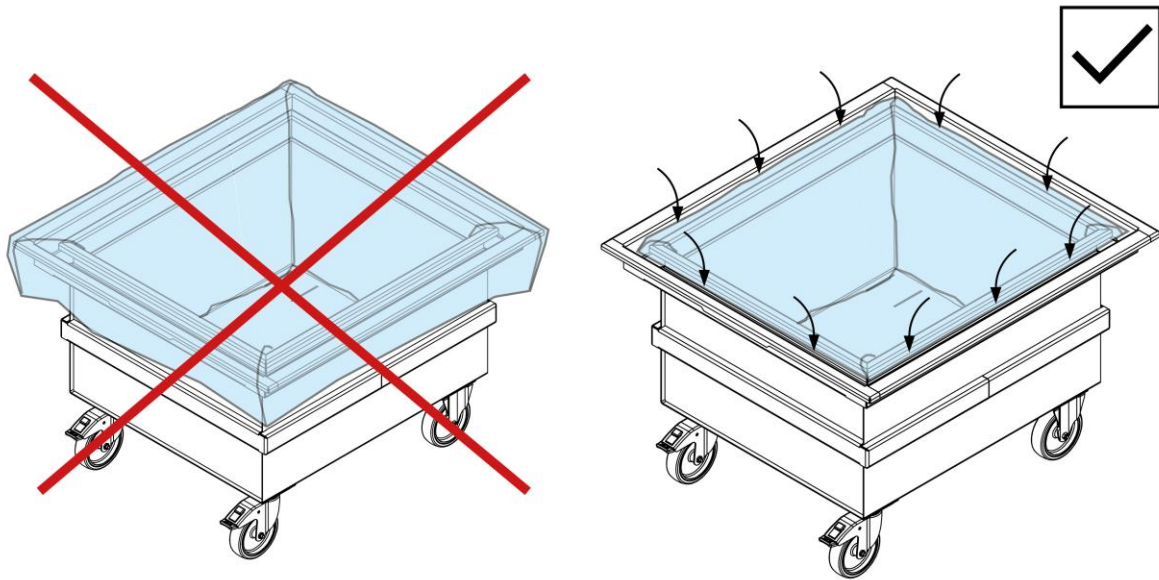


Fig. 25: Maintenance – Inserting the disposal bag

8. Insert a new disposal bag (Pos. 3) into the dust collection trolley, making sure that the edge of the disposal bag is inserted into the inner edge of the dust collection trolley (Pos. 1) all the way round.
9. Push the dust collection trolley (Pos. 1) back into the lifting device as far as it will go. Then lift the dust collection container (Pos. 1) by pressing the clamping lever (Pos. 2) downwards and engaging it.
10. Switch on the product using the I/O pushbutton. See also the chapter Commissioning.

⚠ 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.

7.3.2 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 compressed air maintenance unit is located on the side of the dust collection trolley's lifting device. 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.

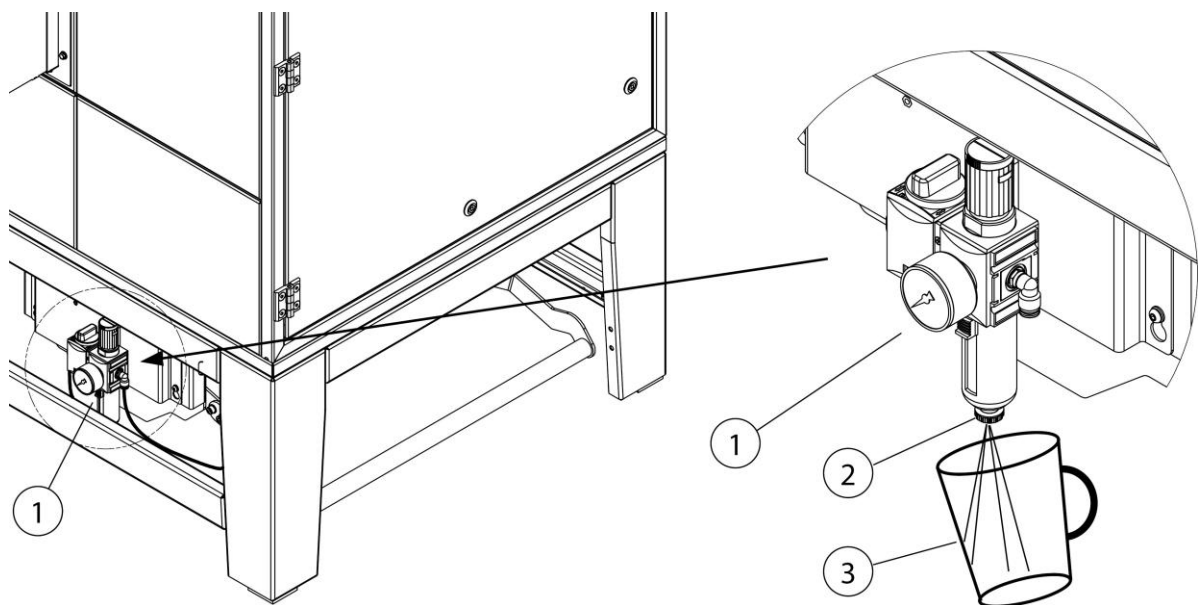


Fig. 26: Maintenance – Draining the compressed air maintenance unit of condensate

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

Tab. 26: Positions on the product

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

7.3.3 Draining the compressed air vessel of condensate

Depending on usage, but at least once a month, the condensate must be drained from the compressed air vessel. Draining can take place while the product is in operation.

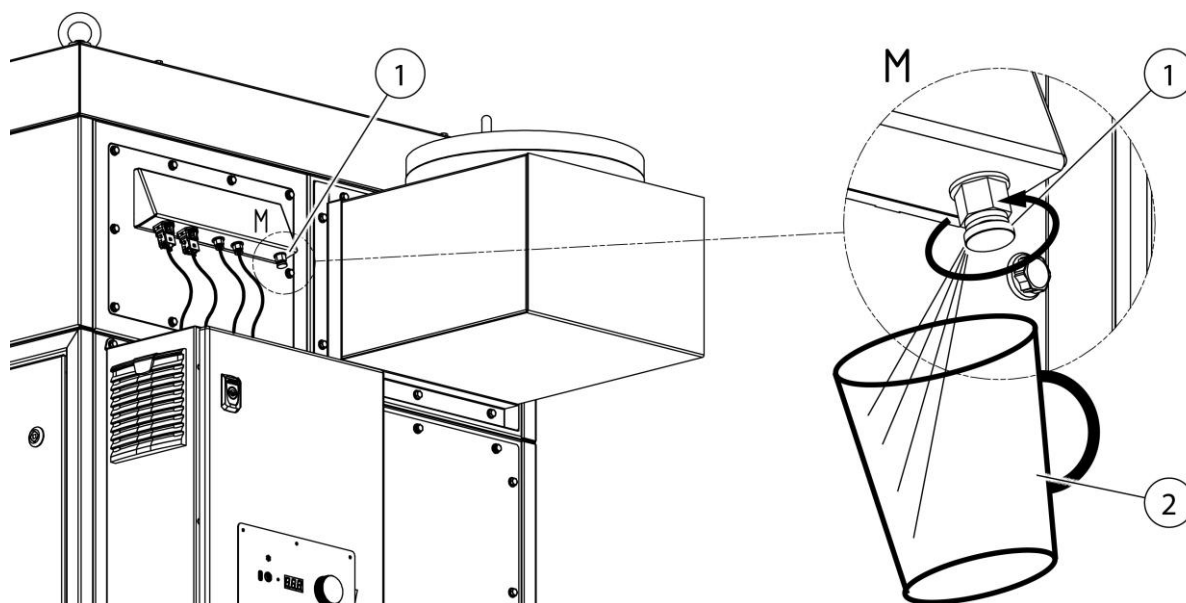


Fig. 27: Maintenance – Draining condensate

Item	Description	Item	Description
1	Condensate drain valve	2	Container

Tab. 27: Maintenance – Draining condensate

To drain the condensate, please proceed as follows:

1. Hold a container (Pos. 2) under the outlet opening of the condensate drain valve (Pos. 1).
2. With the other hand, slowly open the drain valve at the knurled screw.
3. Only close the drain valve 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 Main filter replacement

Perform the filter change as follows:

1. Disconnect the product from the power supply and compressed air supply.
2. Make sure the original replacement filter cartridges and the enclosed disposal bag are available.

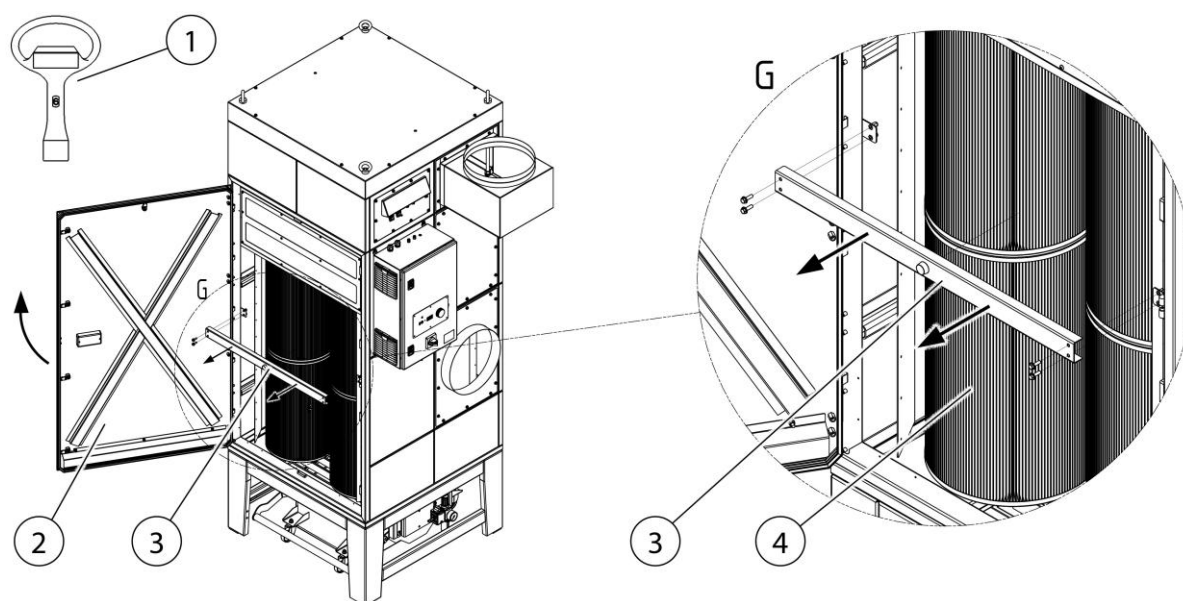


Fig. 28: Changing filters – Access to the filter cartridges

Item	Description	Item	Description
1	Square socket wrench	4	Filter cartridge
2	Maintenance door	5	Dust collection trolley
3	U-profile	6	Hexagon nut

Tab. 28: Changing filters - Access to the filter cartridges

3. Open the maintenance door (Pos. 2). Use the square socket wrench (Pos. 1) for this purpose.
4. Remove the U-profile (Pos. 3) with suitable tools.

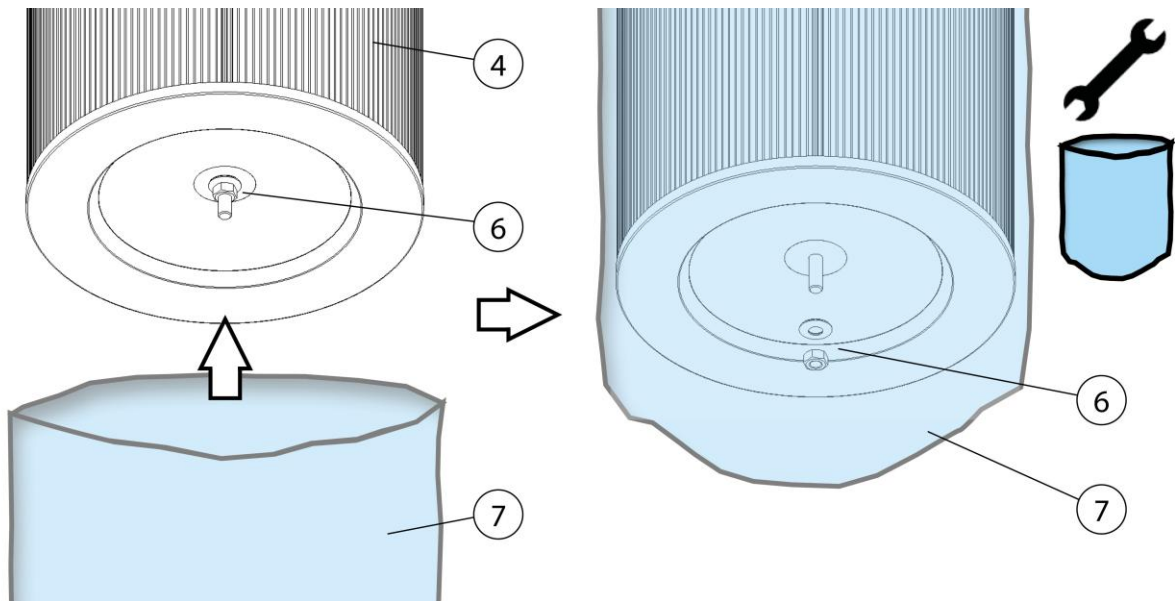


Fig. 29: Filter change – Removing the filter cartridge

5. Loosen the hexagon nut (Pos. 6) in the lower area of the filter cartridge (Pos. 4), but do not remove it yet.
6. Carefully pull the disposal bag (Pos. 7) over the saturated filter cartridge without stirring up dust, as shown in the illustration.
7. Hold the filter cartridge (Pos. 4) in place and undo the hexagon nut/washer (Pos. 6) completely and allow them to fall into the disposal bag (Pos. 7).

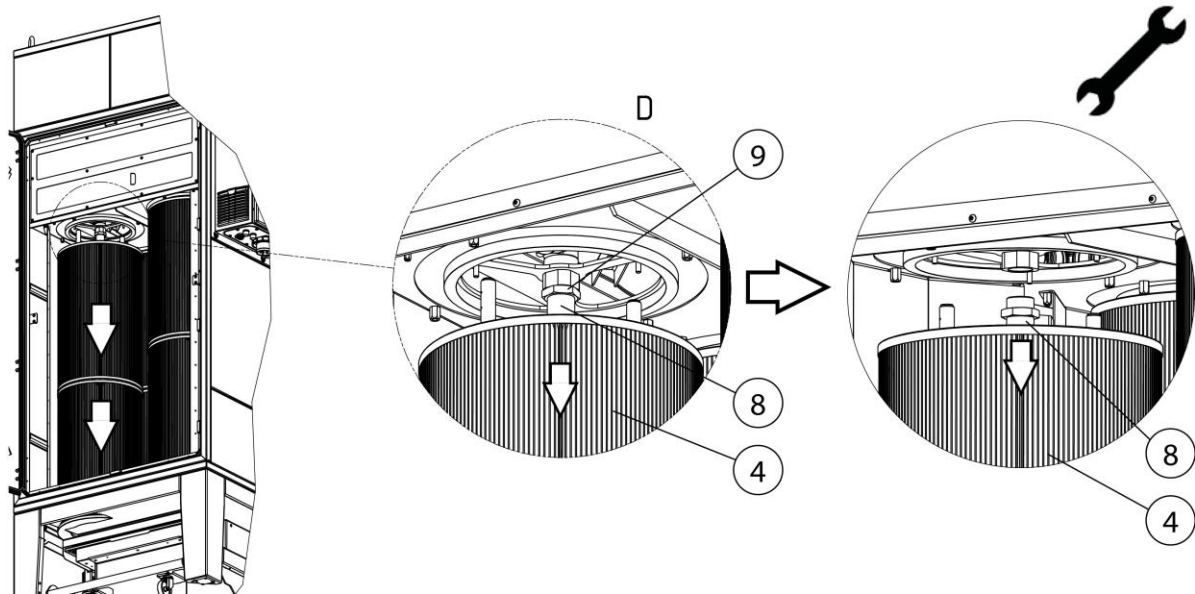


Fig. 30: Changing filters – Removing the rotating nozzle

Item	Description	Item	Description
4	Filter cartridge	8	Rotating nozzle
		9	Hexagon nut

Tab. 29: Changing filters – Removing the rotating nozzle

8. Remove the rotating nozzle (Pos. 8). To do so, loosen the hexagon nut (Pos. 9) using a suitable tool.

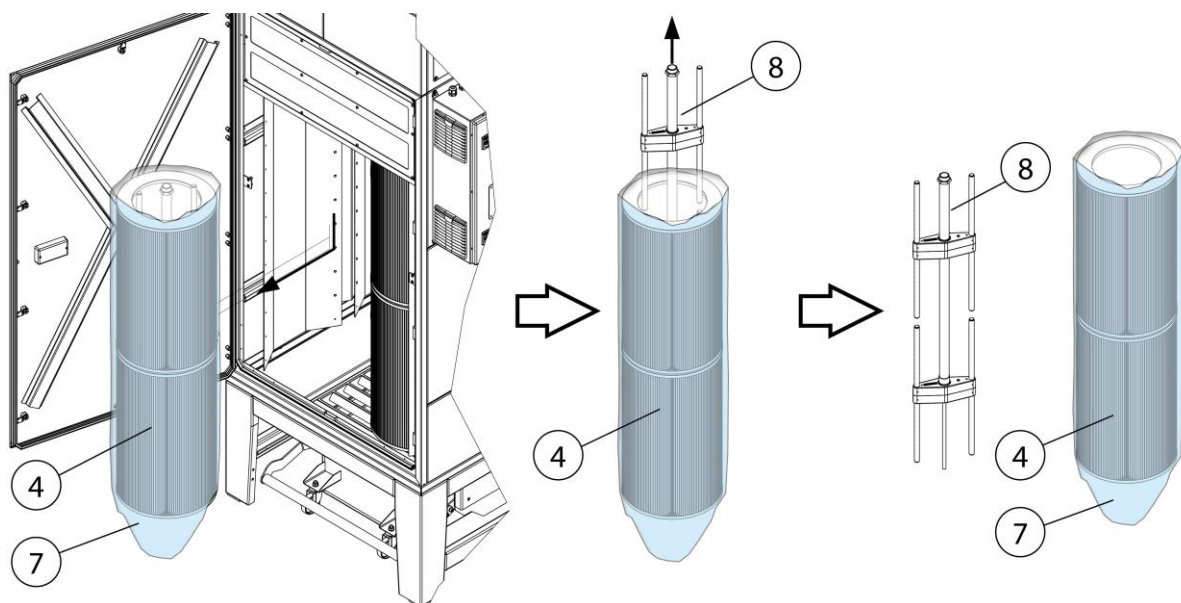


Fig. 31: Changing filters – filter cartridge

9. Remove the disposal bag (Pos. 7) together with the filter cartridge (Pos. 4) + rotating nozzle (Pos. 8) from the product as shown in the illustration.
10. Pull the rotating nozzle (Pos. 8) out of the filter cartridge (Pos. 4).
11. Seal the disposal bag (Pos. 7) with the soiled filter cartridge (Pos. 4) and dispose of it according to the regulations.
12. Repeat steps 6 – 12 for all filter cartridges.
13. After dismantling the contaminated filter cartridges, the new filter cartridges are installed in reverse order.

ATTENTION

Filters without a PTFE membrane require a one-off pre-treatment of the filter surface. See chapter "Commissioning"

7.3.6 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.

7.3.7 Checking the compressed air safety valve

The product is equipped with one or two compressed air vessels.

The compressed air safety valve is located on the compressed air vessel behind the connection panel on the right-hand side of the product.

To test the compressed air safety valve, the product must be connected to the compressed air supply.

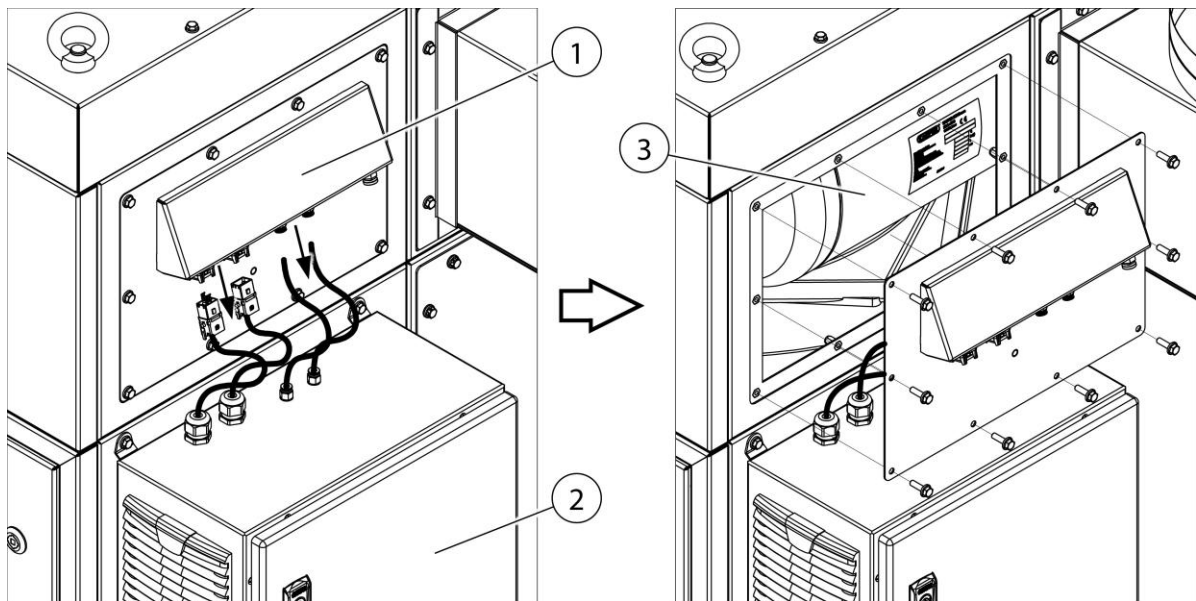


Fig. 32: Access to the compressed air vessel + compressed air safety valve

Item	Description	Item	Description
1	Connection panel	3	Compressed air vessel
2	Control cabinet		

Tab. 30: Positions on the product

To access the compressed air safety valve, proceed as follows.

1. Take the two connection cables and two measuring hoses leading from the control cabinet and disconnect them from the connection panels (Pos. 1) as shown in the illustration.
2. Remove the screws from the connection panels and fold the connection panels to the side, ensuring that the cables and hoses are not subjected to tensile stress.

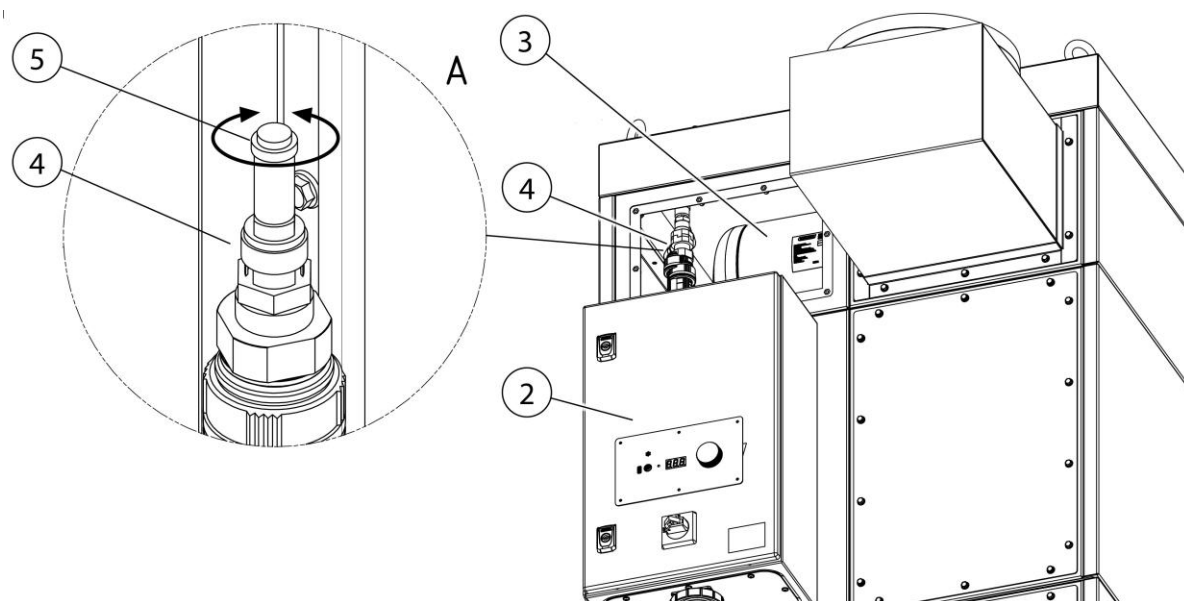


Fig. 33: Checking the compressed air safety valve

Item	Description	Item	Description
2	Control cabinet	4	Compressed air safety valve
3	Compressed air vessel	5	Knurled screw

Tab. 31: Checking the compressed air safety valve

To check the compressed air safety valve, proceed as follows:

3. As shown in the illustration, loosen the knurled screw (Pos. 5) by turning it anticlockwise and open it with approx. 3 – 4 turns until the ventilation process occurs. (audible discharge of compressed air)
4. Allow the compressed air safety valve to blow off briefly (approx. 5 sec. seconds).
5. Screw in the knurled screw (Pos. 5) as far as it will go and hand-tighten it.
6. Close the product again. To do so, refit the connection panels (Pos. 1) and reconnect the connection cables and hoses leading from the control cabinet (Pos. 2) to the connection panels (Pos. 1).
7. Put the product back into operation. See also the chapter “Commissioning”.

7.3.8 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	

Tab. 32: Maintenance schedule

7.3.9 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. 33: 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
Fan does not start.	Insufficient/Unavailable compressed air supply	Check compressed air supply
	Motor protection switch has triggered (only for contactor mode)	Have adjustment checked by a qualified electrician
	Excessive power consumption due to voltage fluctuations or fan fault.	Contact service department
Product does not start, operator control LED display not functioning	Thermal fuse of the control unit is defective	Replace the thermal fuse, allow the product to cool down.
Extraction capacity too low/high noise level	Incorrect direction of rotation of the fan	Have the phase sequence of the supply line changed by a qualified electrician
Extraction capacity too low/non-existent	Dust collection container missing or not properly locked	Push in the dust collecting container as far as it will go and lock it with the clamping lever
	Filter inserts saturated	Replace filter inserts
Product cleans at short intervals.	Filter inserts saturated	Replace filter inserts
Dust escapes on the clean air side	Filter inserts damaged	Replace filter inserts
Product does not clean	Compressed air supply not available/disconnected	Check the compressed air supply and compressed air connections – necessary pressure 5–6 bar, see also the chapter Installation
Signal horn sounds	The set minimum extraction rate has not been reached. Filter inserts saturated, piping/extraction system closed	Filter change required, check piping/extraction system, contact service

Product switches off	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 change required / contact the service department Trigger level 2800 Pa differential pressure at the filter cartridges
----------------------	--	--

Tab. 34: Troubleshooting

7.5 Troubleshooting - Error Codes

Error Code	Possible Cause	Note/ Fix
F1-F89	Error code from frequency converter	Acknowledging the error by pressing the rotary knob
F90	No communication to the frequency converter	De-energize the product for 10 seconds.
F91	Contactor feedback incorrect	Contactor defective – replace contactor
F92	Motor circuit breaker tripped due to overcurrent	Check if the engine is turning freely
	Power supply phase is missing	Have the power supply checked by a qualified electrician.
	Defective engine	Press the reset button on the motor circuit breaker
F93	Differential pressure on the filter too high, filter elements dirty	Changing the filter
	No compressed air connected – filter cleaning without function	Testing and manufacturing compressed air supply
F94	Control errors	De-energize the product for 10 seconds
F95	Compressed air supply not available	Establishing compressed air supply

F96	Rotation field of the supply line phases incorrect	Creating a right-hand rotation field
	Phase Missing	Check the electrical supply
	Supply voltage too high/too low	If necessary, have a qualified electrician set the phase monitoring relay

Tab. 35: Troubleshooting – Error Codes

Note

If the fault cannot be rectified by the customer, the manufacturer's service must be contacted.

7.6 Troubleshooting Warnings

Warn-code	Possible Cause	Note/ Fix
SEr	Service Due	Perform service
A02	Differential pressure at the filter too high	Connect compressed air and switch on the system
	No compressed air connected – device cannot clean	If necessary, contact the service
A05	Extraction power not sufficient (W3) – signal horn sounds	Establish compressed air supply and switch on the product
	Filter elements dirty	Changing the filter

Tab. 36: Troubleshooting - Warnings

7.7 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: Automation Line
 Type: 27730, 27731, 27760, 27761, 22230, 22231, 22260, 22261, 20530, 20531, 20560, 20561, 2....XXX (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 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

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, 20.02.2026

Place, date

B. KEMPER

CEO

Identification of the signatory

9.2 Technical data 20530-205530501-20531-20531501

Designation	Type	
Filters	20530	20531
	20530501	20531501
Filter stages	1	
Filter method	Cleanable filter	
Cleaning method	Rotating nozzle	
Filter surface m ² [ft ²]	15 [161]	
Number of filter elements	3	
Total filter surface m ² [ft ²]	45 [484]	
Type of filter	Filter cartridge	
Filter material	PE-M	ePTFE membrane
Filter efficiency ≥ %	99.9	
Welding fumes class	--	
Test standard	--	
Filter class/dust classification	M	
Basic data		
Maximum fan capacity m ³ /h [CFM]	5500 [3237]	
Extraction capacity m ³ /h [CFM]	2750-3900 [1618-2295]	
Vacuum Pa [inch WC]	2500-1550 [10-6]	
Minimum extraction capacity (triggering threshold for volume flow monitoring) m ³ /h [CFM]		
Motor power kW [hp]	4.0 [5.36]	
Power supply/rated current/ Protection type/ISO class	See name plate	
Permissible ambient temperature (operation) °C [°F]	+5 to +40 [+41 to +104]	
Permissible ambient temperature outdoor (operation) °C [°F]	-10 to +40 [+14 to +104]	
Duty cycle [%]	100	
Noise level dB(A)	72	
Compressed air supply bar [PSI]	5-6 [73-87]	

Compressed air consumption NI/min [CFM]	230 [8]
Compressed air class	2:4:2 ISO 8573-1
Dimensions of the basic product	See Dimensions sheet
Basic product weight kg [lbs]	552 [1217]
Additional information	
Fan type	Radial fan, direct driven

Table 37: Technical data 20530,20531501, 2053120531501

9.3 Technical data 20560-20560501-20561-20561501

Designation	Type	
Filters	20560	20561
	20560501	20561501
Filter stages	1	
Filter method	Cleanable filter	
Cleaning method	Rotating nozzle	
Filter surface m² [ft²]	30 [323]	
Number of filter elements	3	
Total filter surface m² [ft²]	90 [969]	
Type of filter	Filter cartridge	
Filter material	PE-M	ePTFE membrane
Filter efficiency ≥ %	99.9	
Welding fumes class	--	
Test standard	--	
Filter class/dust classification	M	
Basic data		
Maximum fan capacity m³/h [CFM]	7600 [4473]	
Extraction capacity m³/h [CFM]	3800-5500 [2236-3237]	
Vacuum Pa [inch WC]	3200-1850 [13-7]	
Minimum extraction capacity (triggering threshold for volume flow monitoring) m³/h [CFM]		
Motor power kW [hp]	7.5 [10.06]	

Power supply/rated current/ Protection type/ISO class	See name plate
Permissible ambient temperature (operation)°C [°F]	+5 to +40 [+41 to +104]
Permissible ambient temperature outdoor (operation) °C [°F]	-10 to +40 [+14 to +104]
Compressed air supply bar [PSI]	5-6 [73-87]
Compressed air consumption NI/min [CFM]	230 [8]
Compressed air class	2:4:2 ISO 8573-1
Dimensions of the basic product	See Dimensions sheet
Basic product weight kg [lbs]	591 [1303]
Additional information	
Fan type	Radial fan, direct driven

Table 38: Technical data 20560,20560501,20561,20561501

9.4 Technical data 22230-22230501-22231-22231501

Designation	Type	
Filters	22230	22231
	22230501	22231501
Filter stages	1	
Filter method	Cleanable filter	
Cleaning method	Rotating nozzle	
Filter surface m² [ft²]	15 [161]	
Number of filter elements	4	
Total filter surface m² [ft²]	60 [646]	
Type of filter	Filter cartridge	
Filter material	PE-M	ePTFE membrane
Filter efficiency ≥ %	99.9	
Welding fumes class	--	
Test standard	--	
Filter class/dust classification	M	
Basic data		

Maximum fan capacity m ³ /h [CFM]	5500 [3237]
Extraction capacity m ³ /h [CFM]	2750-3900 [1618-2295]
Vacuum Pa [inch WC]	2500-1550 [10-6]
Minimum extraction capacity (triggering threshold for volume flow monitoring) m ³ /h [CFM]	
Motor power kW [hp]	4.0 [5.36]
Power supply/rated current/ Protection type/ISO class	See name plate
Permissible ambient temperature (operation) °C [°F]	+5 to +40 [+41 to +104]
Permissible ambient temperature outdoor (operation) °C [°F]	-10 to +40 [+14 to +104]
Compressed air supply bar [PSI]	5-6 [73-87]
Compressed air consumption NI/min [CFM]	230 [8]
Compressed air class	2:4:2 ISO 8573-1
Dimensions of the basic product	See Dimensions sheet
Basic product weight kg [lbs]	559 [1233]
Additional information	
Fan type	Radial fan, direct driven

Table 39: Technical data 22230,22230501,22231,22231501

9.5 Technical data 22260-22260501-22261-2661501

Designation	Type	
Filters	22260	22261
	22260501	22261501
Filter stages	1	
Filter method	Cleanable filter	
Cleaning method	Rotating nozzle	
Filter surface m ² [ft ²]	3x30 + 1x15 [3x323+1x161]	
Number of filter elements	4	
Total filter surface m ² [ft ²]	105 [1130]	

Type of filter	Filter cartridge	
Filter material	PE-M	ePTFE membrane
Filter efficiency ≥ %	99.9	
Welding fumes class	--	
Test standard	--	
Filter class/dust classification	M	
Basic data		
Maximum fan capacity m³/h [CFM]	7600 [4473]	
Extraction capacity m³/h [CFM]	3800-5500 [2236-3237]	
Vacuum Pa [inch WC]	3200-1850 [13-7]	
Minimum extraction capacity (triggering threshold for volume flow monitoring) m³/h [CFM]		
Motor power kW [hp]	7.5 [10.06]	
Power supply/rated current/ Protection type/ISO class	See name plate	
Permissible ambient temperature (operation)°C [°F]	+5 to +40 [+41 to +104]	
Permissible ambient temperature outdoor (operation) °C [°F]	-10 to +40 [+14 to +104]	
Compressed air supply bar [PSI]	5-6 [73–87]	
Compressed air consumption NI/min [CFM]	230 [8]	
Compressed air class	2:4:2 ISO 8573-1	
Dimensions of the basic product	See Dimensions sheet	
Basic product weight kg [lbs]	598 [1319]	
Additional information		
Fan type	Radial fan, direct driven	

Table 40: Technical data 22260,2260501,22261,2261501

9.6 Technical data 27730-27730501-27731-27731501

Designation	Type	
Filters	27730	27731

	27730501	27731501
Filter stages	1	
Filter method	Cleanable filter	
Cleaning method	Rotating nozzle	
Filter surface m ² [ft ²]	15 [161]	
Number of filter elements	4	
Total filter surface m ² [ft ²]	60 [646]	
Type of filter	Filter cartridge	
Filter material	PE-M	ePTFE membrane
Filter efficiency ≥ %	99.9	
Welding fumes class	--	
Test standard	--	
Filter class/dust classification	M	
Basic data		
Maximum fan capacity m ³ /h [CFM]	5500 [3237]	
Extraction capacity m ³ /h [CFM]	2750-3900 [1618-2295]	
Vacuum Pa [inch WC]	2500-1550 [10-6]	
Minimum extraction capacity (triggering threshold for volume flow monitoring) m ³ /h [CFM]		
Motor power kW [hp]	4.0 [5.36]	
Power supply/rated current/ Protection type/ISO class	See name plate	
Permissible ambient temperature (operation) °C [°F]	+5 to +40 [+41 to +104]	
Permissible ambient temperature outdoor (operation) °C [°F]	-10 to +40 [+14 to +104]	
Compressed air supply bar [PSI]	5-6 [73-87]	
Compressed air consumption NI/min [CFM]	230 [8]	
Compressed air class	2:4:2 ISO 8573-1	
Dimensions of the basic product	See Dimensions sheet	
Basic product weight kg [lbs]	559 [1233]	
Additional information		

Fan type	Radial fan, direct driven
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Table 41: Technical data 27730,27730501, 27731,27731501

9.7 Technical data 27760-27760501-27761-27761501

Designation	Type	
Filters	27760	27761
	27760501	27761501
Filter stages	1	
Filter method	Cleanable filter	
Cleaning method	Rotating nozzle	
Filter surface m ² [ft ²]	30 [323]	
Number of filter elements	4	
Total filter surface m ² [ft ²]	120 [1292]	
Type of filter	Filter cartridge	
Filter material	PE-M	ePTFE membrane
Filter efficiency ≥ %	99.9	
Welding fumes class	--	
Test standard	--	
Filter class/dust classification	M	
Basic data		
Maximum fan capacity m ³ /h [CFM]	7600 [4473]	
Extraction capacity m ³ /h [CFM]	3800-5500 [2236-3237]	
Vacuum Pa [inch WC]	3200-1850 [13-7]	
Minimum extraction capacity (triggering threshold for volume flow monitoring) m ³ /h [CFM]		
Motor power kW [hp]	7.5 [10.06]	
Power supply/rated current/ Protection type/ISO class	See name plate	
Permissible ambient temperature (operation) °C [°F]	+5 to +40 [+41 to +104]	
Permissible ambient temperature outdoor (operation) °C [°F]	-10 to +40 [+14 to +104]	

Compressed air supply bar [PSI]	5-6 [73-87]
Compressed air consumption NI/min [CFM]	230 [8]
Compressed air class	2:4:2 ISO 8573-1
Dimensions of the basic product	See Dimensions sheet
Basic product weight kg [lbs]	605 [1334]
Additional information	
Fan type	Radial fan, direct driven

Table 42: Technical data 27760,27760501, 27761, 27761501

9.8 Dimension sheets – PlasmaFil, ArcFil, LaserFil

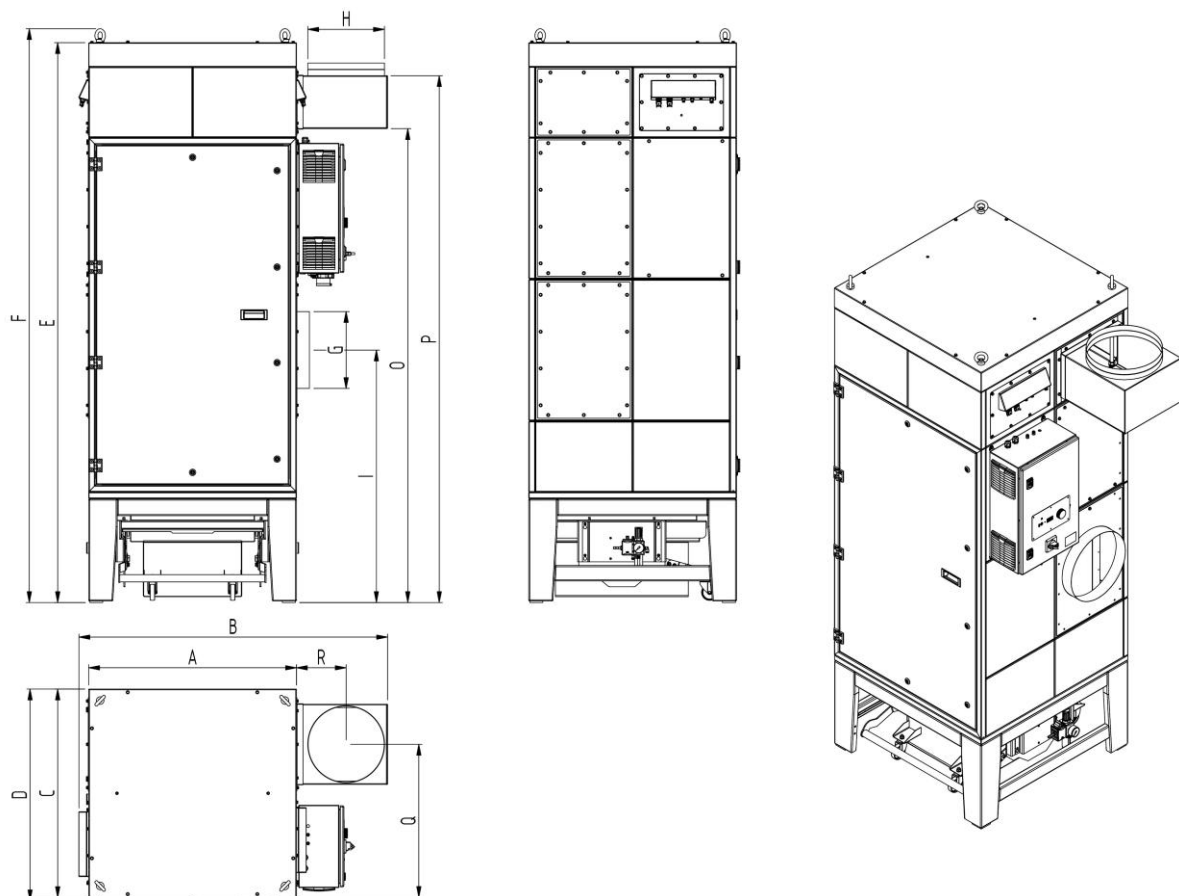


Fig. 34: Dimensions sheet

Symbol	Dimensions mm [in]	Symbol	Dimensions mm [in]
A	962 [37.9]	H	355 [14.0]
B	1385 [54.5]	I	1166 [45.9]

C	962 [37.9]	O	2188 [46.8]
D	978 [38.5]	P	2433 [95.8]
E	2585 [101.8]	Q	707 [27.8]
F	2650 [104.3]	R	230 [9.1]
G	355 [14.0]		

Tab. 43: Dimensions table

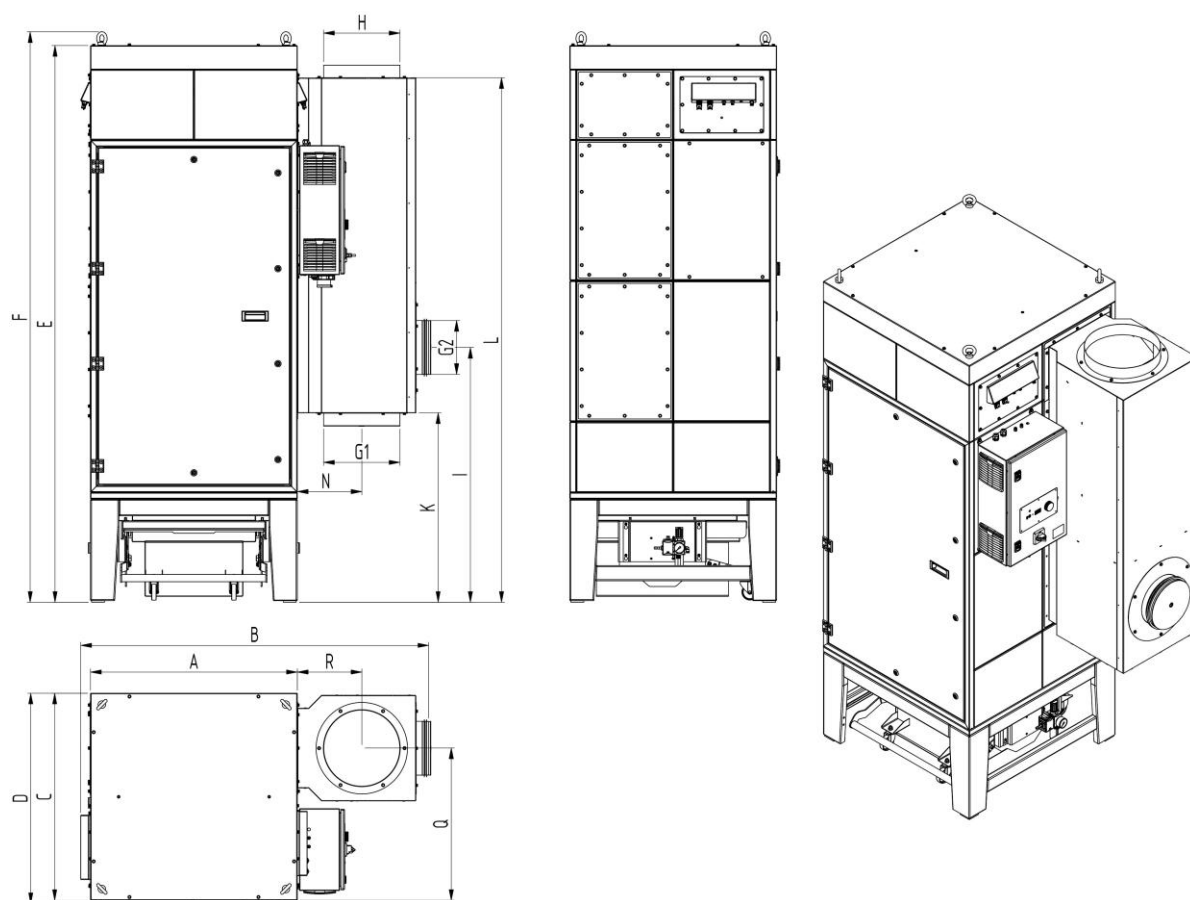


Fig. 35: Dimensions sheet – optional

Symbol	Dimensions mm [in]	Symbol	Dimensions mm [in]
A	962 [37.9]	H	355 [14.0]
B	1618 [63.7]	I	1183 [46.6]
C	962 [37.9]	K	880 [34.7]
D	978 [38.5]	L	2436 [95.9]
E	2585 [101.8]	N	300 [11.8]
F	2650 [104.3]	Q	708 [27.9]

G1	355 [14.0]	R	300 [11.8]
G2	250 [9.8]		

Tab. 44: Dimensions sheet – optional

9.9 Spare parts

Consec. no.	Description	Note	Part no.
1	Disposal bag (10 pcs.)		1190139
2	PE-M filter cartridge 15 m ² incl. sealing ring	Short design	1090730
3	PE-M filter cartridge 30 m ² incl. sealing ring	Long design	1090731
4	Pre-coating agent 1.0 kg	Required for PE-M filter cartridges	1090320
5	ePTFE filter cartridge 15 m ² incl. sealing ring	Short design	1090728
6	ePTFE filter cartridge 30 m ² incl. sealing ring	Long design	1090729
7	Filter mat extraction capacity regulation (5 pcs.)		1560024

Tab. 45: Spare parts and accessories

9.10 Accessories

Consec. no.	Description	Note	Part no.
1	External On/Off		Upon request
2	Silencer DN 355 mm		Upon request
3	Combination connection box with integrated silencer – DN 355 mm, DN 355 mm/ 250 mm	See chapter Functional description – optional connection boxes (C)	1131079

4	Intake area connection box – DN 355 mm	See chapter Functional description – optional connection boxes (B)	1130764
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Tab. 46: Accessories

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

