



FilterTable Clean

EN – Operating instructions (translation from the original)

EN – Operating instructions (translation from the original) - 2 -

EN – Operating instructions (translation from the original)

1	General	- 5 -
1.1	Introduction.....	- 5 -
1.2	Purpose and target audience of the operating instructions	- 5 -
1.3	References to copyright and industrial property rights.....	- 6 -
1.4	Definitions.....	- 6 -
2	Safety.....	- 8 -
2.1	General information	- 8 -
2.2	Warnings.....	- 8 -
2.3	Safety devices	- 9 -
2.4	Safety devices.....	- 9 -
2.5	Personal protective equipment	- 10 -
2.6	Residual risks	- 10 -
2.6.1	Pictograms on the product	- 11 -
2.7	Markings/signs to be affixed by the operating company	- 12 -
2.8	Safety instructions for operating staff	- 12 -
2.9	Safety instructions for maintenance/troubleshooting.....	- 13 -
2.10	Notes regarding special types of hazard	- 13 -
3	Product information.....	- 16 -
3.1	General functional description.....	- 16 -
3.2	Identification of functional groups	- 16 -
3.3	Functional description.....	- 18 -
3.4	Intended use	- 18 -
3.5	Markings and signs on the product.....	- 19 -
3.6	Optional extras	- 19 -
3.6.1	ATEX motor.....	- 20 -
3.6.2	Exhaust air elbow and silencer	- 20 -
3.6.3	HEPA Absolute Filter – H13.....	- 20 -
3.6.4	Side partitions without extraction	- 21 -
3.6.5	Work surface without rear panel	- 21 -
3.6.6	Protective strips on the worktop	- 22 -
3.6.7	Castors.....	- 22 -
3.6.8	Arrangement of the clamps.....	- 22 -

4	Transport and Storage	- 23 -
4.1	Transport	- 23 -
4.2	Storage conditions	- 23 -
4.3	Lifting and transport	- 23 -
4.4	Space required for operation and maintenance	- 24 -
4.5	Permissible environmental conditions	- 24 -
5	Assembly	- 25 -
5.1	List	- 25 -
5.2	Connection of external supply lines	- 25 -
5.2.1	Power supply	- 26 -
5.2.2	Pneumatic supply	- 26 -
5.3	Fitting of accessories	- 27 -
5.3.1	Bow and silencer	- 27 -
5.3.2	HEPA filter at the outlet	- 29 -
5.3.3	Side panels	- 30 -
5.3.4	Anti-scratch strips on the contact surface	- 31 -
5.3.5	Castors	- 31 -
5.3.6	Position of the clamp	- 33 -
6	Use	- 36 -
6.1	Qualification of the operating personnel	- 36 -
6.2	General information	- 36 -
6.3	Operating and control devices on the product	- 36 -
6.4	Description of operation	- 42 -
6.4.1	Commissioning and preliminary checks	- 42 -
6.4.2	Commissioning	- 43 -
6.4.3	Shutdown procedure	- 43 -
6.4.4	Checking the direction of rotation	- 44 -
7	Maintenance	- 45 -
7.1	Care	- 45 -
8	MAINTENANCE INSTRUCTIONS	- 46 -
8.1	Maintenance – General Information	- 46 -
8.2	Safety instructions for maintenance	- 46 -
8.3	Routine maintenance	- 47 -
8.4	Cleaning the product	- 48 -

8.4.1	Checking and replacing the filter elements.....	- 49 -
8.4.2	Tensioning and replacing the belt	- 51 -
8.4.3	Lubrication of the bearings.....	- 52 -
8.5	Extraordinary maintenance.....	- 53 -
8.6	Troubleshooting – Errors and Faults	- 54 -
8.7	Emergency measures	- 55 -
9	Disposal	- 57 -
9.1	Plastics	- 57 -
9.2	Metals.....	- 57 -
9.3	Filter elements.....	- 57 -
10	Annex	- 58 -
10.1	Technical data.....	- 58 -
10.2	Filter cartridge data	- 61 -
10.3	Information on metal filters.....	- 62 -
10.4	Machine design	- 63 -
10.5	Dimensions and weights.....	- 63 -
10.6	Spare parts	- 64 -
10.7	Accessories.....	- 65 -
11	APPENDICES	- 65 -
11.1	List of Appendices	- 65 -

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 Purpose and target audience of the operating instructions

The operating and maintenance manual must be retained for the entire service life of the product. If the product is transferred to a third party, the manual must therefore be handed over together with the other accompanying documents to ensure the safety of the operator and the user.

This manual contains the necessary instructions for the correct use of the product and thus enables the following operations to be carried out:

- INSTALLATION
- OPERATION
- SETTINGS
- MAINTENANCE
- DECOMMISSIONING

It is intended for both the user and the operator responsible for the above-mentioned activities and specifies (where applicable) the necessary qualifications with reference to paragraph 1.2.

Failure to comply with the instructions contained in this manual relieves the manufacturer of all liability for such omissions.

It should also be noted that in the following cases:

- the product is used improperly;
- the product is used in contravention of specific national regulations;
- lack of maintenance;
- unauthorised modifications or tampering;
- use of non-original or non-specific spare parts;
- failure to follow the instructions;

The manufacturer accepts no liability for risks arising from failure to comply with these regulations. The manual cannot be used as a reference when modifications are to be made that alter the product's configuration or its intended use. In such cases, liability is limited exclusively to any manufacturing defects.

1.3 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.

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.

1.4 Definitions

- **User**

The person who, by virtue of their position, is designated to use the BC extraction table on a continuous basis.

- **Operator**

The persons responsible for the installation, operation, adjustment, maintenance, cleaning, repair or transport of the product.

- **Product (machine)**

In this operating and maintenance manual, the term 'product (machine)' refers to the BC pneumatically cleaned cartridge extraction table.

The tasks described in this section must only be carried out by personnel qualified for the respective task. The level of qualification is determined by the requirements specified by the manufacturer.

NOTE

The following qualification levels relate exclusively to machine-specific training. They have no bearing whatsoever on internal contractual or organisational qualifications within the customer's corporate structure.

Qualification 1

Staff without specific technical knowledge, but who are authorised to carry out simple operating tasks on the BC extraction table.

Before using the equipment for the first time, these individuals must be briefed on how to use the control and monitoring devices and must have carefully read this operating and maintenance manual.

Qualification 2

Staff with specific knowledge of electronically controlled machines, particularly in the field of mechanical operations.

This qualification authorises the holder to carry out adjustment, routine and special maintenance work in accordance with the guidelines set out in this operating and maintenance manual. The necessary knowledge is acquired through targeted training and a thorough study of the manual.

Qualification 3

Personnel with specific training in electronically controlled automatic machines who are responsible for electrical work.

This qualification authorises the holder to carry out installation, adjustment and maintenance work. The necessary training is provided through training courses and a thorough reading of this operating and maintenance manual.

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 Warnings

This manual contains notes intended to draw the user's/operator's attention to a specific procedure or operation.

There are three types of note:

NOTE

These are notes intended to guide and optimise the operator's actions or to highlight specific features of the product.

CAUTION

These are very important instructions detailing actions to be taken or special precautions to be observed before the product is put into operation, in order to prevent damage to the product.

⚠ CAUTION

This symbol, in conjunction with the signal word 'Caution', indicates a potentially hazardous situation. Failure to observe the safety instruction may result in minor or slight injuries.

This symbol is also used for warnings regarding damage to property.

⚠ WARNING

The symbol, when used with the signal word 'Warning', indicates a potentially dangerous situation. Failure to follow the safety instructions may result in death or serious injury.

⚠ DANGER

These are very important warnings indicating actions that must be taken or avoided, or special precautions that must be observed before working on the product, in order to prevent personal injury or damage to property.

2.3 Safety devices

All moving parts of the product are shielded by protective devices:

Fixed guards: Fixed guards are all guards that are secured to the product using screws, latches or other fastening systems, and which require a tool to open or remove.

⚠ DANGER

It is strictly forbidden to replace the guards with non-original parts. It is also forbidden to tamper with the guards or to operate the product with the guards removed. The manufacturer accepts no liability for damage resulting from modifications to the safety systems.

2.4 Safety devices

The product is fitted with two types of stop devices:

1. Normal shutdown

During normal operation, the unit is switched off using the 'OFF' button on the control panel.

2. Shutdown by disconnecting from the power supply (Category 0 according to EN 60204-1)

Complete shutdown is achieved by disconnecting the product from the power supply via the mains plug.

This completely interrupts the power supply.

This method of deactivation must be used:

- at the end of the work shift,
- in an emergency,
- before carrying out maintenance, cleaning and repair work.

The appropriate shutdown method must be selected in accordance with the guidelines described in the 'Operation' chapter.

NOTE

Due to the machine's simple design, disconnecting the mains plug is also used as an emergency stop function.

⚠ DANGER

The use of control units outside the specifications described in this operating manual, as well as their replacement with non-approved or non-compliant components, may lead to malfunctions and dangerous situations.

In such cases, no liability is accepted for any resulting damage.

⚠ DANGER

Control units may only be installed or modified with the manufacturer's prior approval.

Unauthorised modifications may compromise the safety of the product and pose a risk to operators and third parties.

2.5 Personal protective equipment

No personal protective equipment is required for the intended use of the product.

However, during cleaning and maintenance work, a suitable respirator (minimum FFP2) must be worn to avoid the risk of inhaling dust.

2.6 Residual risks

Despite design measures and integrated safety devices, residual risks may still exist during operation, maintenance and cleaning work.

Compliance with the instructions and measures described in this operating manual helps to minimise these risks.

The following residual risks must be taken into account:

- **Electrical hazard**

There is a risk of contact with live components in the control cabinet, even after the product has been switched off.

After disconnecting the power supply, wait for at least 1 minute before opening the control cabinet to allow any residual voltage to dissipate.

• Risk from dust exposure

During cleaning and maintenance work, particularly when cleaning filters, there is a risk of inhaling dust that is harmful to health.

Suitable personal protective equipment must be used, in particular a respirator (minimum FFP2).

The operator is responsible for selecting the appropriate protective equipment, depending on the substances being extracted.

• Fire hazard due to dust deposits

Flammable dusts may accumulate in the dust collection bins.

To prevent fire hazards, the dust collection containers must be emptied and cleaned regularly, at least at the end of each shift or after the fan has been switched off.

⚠ DANGER

Predictable or unpredictable misuse may result in risks to persons and property.

The operator must ensure that the product is used exclusively for its intended purpose.

2.6.1 Pictograms on the product

This section lists the meanings of the pictograms displayed on the product. Their use enables the information required for the correct and safe use of the product to be provided quickly and unambiguously.

Icon	Meaning	Icon	Meaning
	Danger: Read the operating instructions.		Danger due to electrical voltage.
	Wear hand protection		General hazard
	Wearing a protective mask is compulsory during maintenance work, when changing the filter and when emptying the drawer		Fire hazard

Table1 : Pictograms on the machine

2.7 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.

2.8 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.

2.9 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.

2.10 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.

⚠ WARNING**Danger due to the product falling over!**

Serious injuries due to the product tilting/falling over.

- Before moving, release the brakes on the castors (if available).
- Move and set down the product only on flat, smooth floor coverings.
- Only move or transport the product using the transport lugs/handles provided.
- Observe the total weight, attachment points and centre of gravity of the load.
- Do not sit on or climb onto the product.
- Only transport the product without load/workpieces.

⚠ 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.

⚠ 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 General functional description

The product is designed for the collection and filtration of dry dust and flue gases from industrial processes of various origins.

The product must not be used with dusts with a high moisture content or under operating conditions that deviate from those defined in the technical documentation.

The product must only be used for the treatment of substances that do not pose an explosion hazard.

DANGER

The product must not be used in environments where an ATEX atmosphere is present or could become present during normal operation, even for short periods.

3.2 Identification of functional groups

The following page shows the arrangement of the product's main functional groups. Each of the groups shown fulfils a specific function within the work process described in the following section.

The diagram is accompanied by a legend.

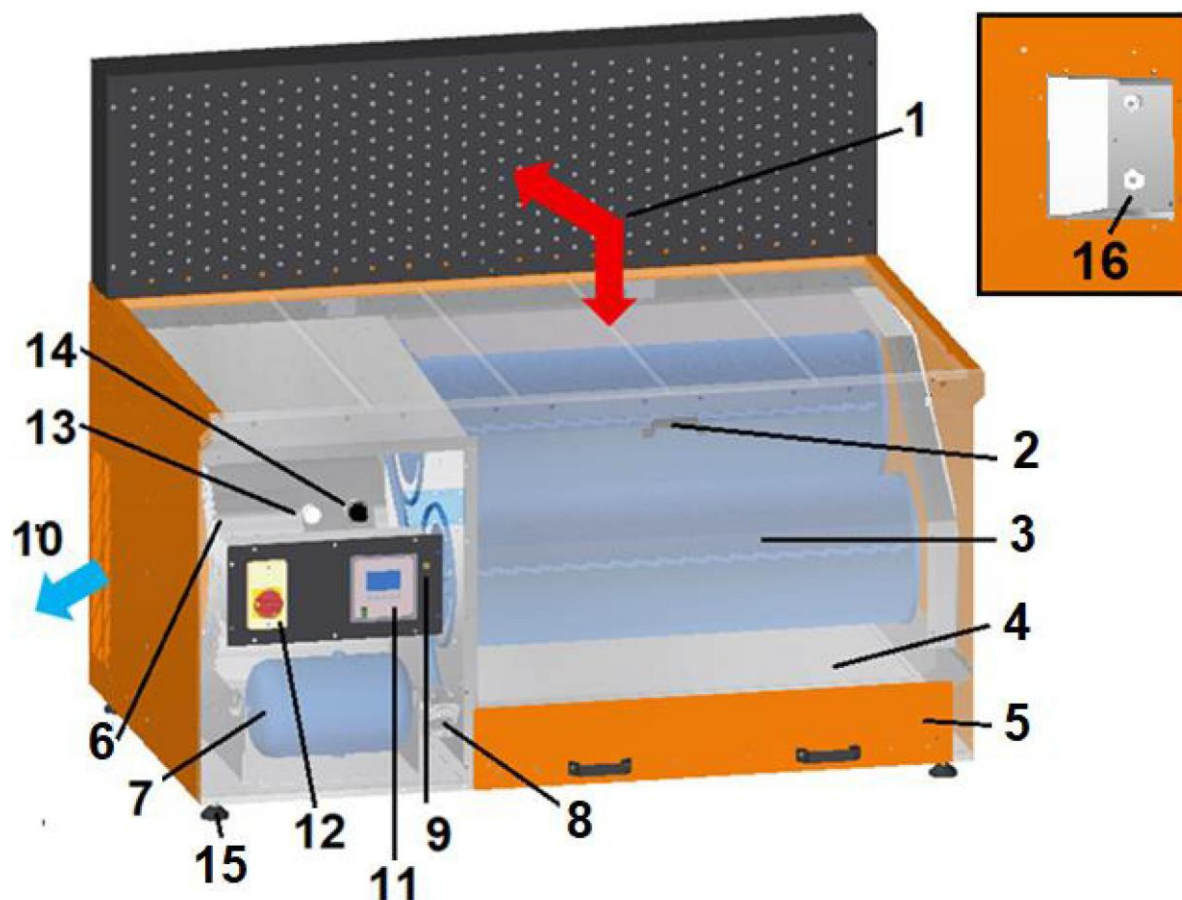


Fig.1: Functional groups

Item	Description	Item	Description
1	Intake area – contaminated air	9	Air outlet – filter cleaning air
2	Filter cartridge cover	10	Clean air outlet
3	Filter cartridges	11	Control unit for the pneumatic cleaning of the filters
4	Wire mesh filters	12	On/Off switch for fan
5	Dust collection container	13	Pressure gauge for pneumatic cleaning
6	Fan	14	Pressure regulator for pneumatic cleaning
7	Compressed air tank	15	Adjustable machine base

8	Compressed air solenoid valve for filter cleaning	16	Compressed air connection (at the rear of the product)
---	---	----	--

Table 2 : Functional groups

3.3 Functional description

The product is designed to capture and filter dust-laden air. The contaminated air is drawn in via the contact surface and the front panel and fed into the filter section. The air is conveyed by an integrated extractor fan, which creates a vacuum inside the product.

A double-inlet fan made of carbon steel is fitted for air conveyance. The squirrel-cage impeller, made of galvanised sheet metal, is statically and dynamically balanced. This reduces vibrations and extends the service life of the motor bearings. The fan is driven by an electric motor via a belt drive.

In the filter section, fine dust particles are separated from the air stream. The filter section is fitted with flat metal mesh filters and filter cartridges. The filter elements are arranged in such a way that dismantling, replacement and maintenance can be carried out with minimal effort.

After the filtration process, the cleaned air is conveyed through the extractor and discharged from the unit via the side exhaust section.

Separated particles collect in removable collection drawers in the lower front section of the unit. The collection drawers can be removed for emptying.

The unit is fitted with a pneumatic cleaning system for cleaning the filter cartridges. The compressed air required is filtered and dehumidified prior to use. Cleaning is carried out by pulses of compressed air into the interior of the filter cartridges. The system comprises a tested and certified steel tank, diaphragm valves and a control unit located at the front.

3.4 Intended use

The product is intended for the extraction and filtration of dry dust and flue gases from industrial processes of various origins.

Use is permitted only under the operating conditions for which the product was designed. The product must not be used in the following circumstances:

- Dusts with a high moisture content
- operating conditions that deviate from the design specifications
- Materials or process media posing an explosion hazard

The product must only be used if the material being processed does not pose an explosion hazard.

⚠ DANGER

The product must not be used in environments where an ATEX atmosphere is present or could become present during normal operation, even for short periods.

⚠ DANGER

In the event of improper use or if the nature of the process to be carried out is not specified, the manufacturer accepts no liability for any resulting malfunctions, damage or accidents.

CAUTION

If work processes may generate incandescent particles, sparks or fires, additional protective measures must be put in place. These include, in particular:

- Spark and flame detection systems
- suitable alternative devices to reduce the risk of fire
- suitable alternative devices for eliminating the fire risk

3.5 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.

3.6 Optional extras

The product is available with various optional features on request. The availability of individual options depends on the specific model.

3.6.1 ATEX motor

An ATEX-certified electric motor can be used as an option.

The use of an ATEX motor may be appropriate in applications where the presence of a potentially explosive atmosphere cannot be completely ruled out.

⚠ WARNING

Risk of explosion due to explosive or flammable dusts.

The product is not designed as a fully explosion-protected system. Use in an explosive atmosphere and the extraction of explosive or flammable dusts is only permitted if the operator has checked and approved the flammability and explosiveness of the substances, as well as the requirements arising from the risk assessment.

The dust drawer must be emptied after every shift. When not in use, the dust drawer should be left open.

3.6.2 Exhaust air elbow and silencer

A rectangular exhaust elbow with a downstream silencer can be fitted as an option.

Depending on the installation situation, a noise reduction of approx. 8–10 dB(A) can be achieved. The actual effect depends on operating conditions and environmental factors.

3.6.3 HEPA Absolute Filter – H13

As an option, the product can be fitted with an H13 absolute filter at the exhaust air outlet. Where permitted, this filter allows the purified air to be recirculated into the workspace.

The use of an H13 filter results in a reduction in the air flow rate of approximately 15% compared with the rated value

H13* absolute filter in accordance with EN 1822	
Filter medium made from fire-resistant and water-repellent glass fibre microfibre paper	
Efficiency	>99.95%
MERV	13
Max. operating temperature	70 °C
Relative humidity	100
Fire resistance (DIN 53438)	Class F1

Table3 : Absolute filters

Model	Number of absolute filters	Dimensions mm [in]
95515330, 95520331, 95615331	1	610 x 610 x 292 [24.0 x 24.0 x 11.5]
95520500, 95520501, 95620501	1	762 x 610 x 292 [30.0 x 24.0 x 11.5]

Table4 : Filter – Dimensions

NOTE

The use of an H13 filter may reduce the specified air flow rate by approx. 15%.

3.6.4 Side partitions without extraction

The optionally available side panels (without extraction) allow the work surface to be enclosed in order to reduce material loss and thus increase the collection efficiency. The side panels are attached to the product's side frame by means of hinges, allowing them to be lowered if necessary to carry out work on components that are longer than the work surface.

3.6.5 Work surface without rear panel

The product can be supplied without a rear panel.

In this version, the worktop has a greater depth to accommodate longer workpieces.

3.6.6 Protective strips on the worktop

Plastic protective strips can be fitted to the work surface as an option.

These serve to protect workpieces from direct contact with the metal surface of the extraction plate.

3.6.7 Castors

As an option, the product can be fitted with castors instead of height-adjustable feet.

This makes transport and flexible positioning easier.

Using the castors increases the overall height of the product.

The version with castors is permitted for a maximum floor load of 150 kg/m².

3.6.8 Arrangement of the clamps

The product may be supplied with a device for securing a vice. The bracket is anchored to the front of the product and to the extraction plate to ensure maximum stability.

4 Transport and Storage

4.1 Transport

The product must be properly packaged and secured for transport using stretch film or another suitable protective system to protect it from dust and the elements.

4.2 Storage conditions

When stored indoors, the product is designed to withstand the following environmental conditions:

- Temperatures between -5°C and +50°C.
- Relative humidity < 80% (non-condensing)

4.3 Lifting and transport

Lifting and internal transport must only be carried out using suitable equipment designed for this purpose.

After unpacking, it is recommended that transport on the floor be carried out using suitable industrial trucks (e.g. forklift trucks with sufficiently long forks) or using crane systems or overhead travelling cranes and suitable slings.

Before transport, all supply and connection lines (e.g. electrical cables, compressed air lines and, where applicable, connected exhaust air or pipe systems) must be completely disconnected.

CAUTION

The product or parts of the product must not be lifted or transported whilst they are still connected to supply lines. Otherwise, the supply lines and the product may be damaged.

⚠ DANGER

Before any lifting operation, ensure that the lifting equipment used is suitable for the weight and load distribution of the unit to be moved.

⚠ DANGER

During transport, avoid impacts, sudden movements and uncontrolled acceleration. The area of movement must be free of obstacles. Ensure that unauthorised persons do not enter the danger zone.

4.4 Space required for operation and maintenance

There must be a clearance of at least 1.5 m in front of the product and around its entire perimeter. This does not apply to the side where the product is connected to other machines in the plant. The clearance is required for operation and for opening the covers. It must also be provided to allow access for personnel carrying out operating, repair, inspection and maintenance work.

4.5 Permissible environmental conditions

The product is designed for use in industrial environments. The following environmental conditions are provided for reference:

- Temperature: +5 °C to +40 °C
- Relative humidity: < 80%, non-condensing

The product is not intended for use in environments that deviate from the specified environmental conditions.

NOTE

Use of the product outside the specified environmental conditions does not constitute intended use. In such cases, the liability of the manufacturer or the distributor may be limited. Any deviating operating conditions require prior approval from the manufacturer.

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.
 - It must be ensured that the installation location and point of use of the product provides sufficient load-bearing capacity and good stability.
-

⚠ DANGER

Falling or tipping parts may cause life-threatening injuries!

Tipping or falling loads lead to severe to fatal injuries.

- 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 List

The product must be installed in accordance with the instructions set out in the sections of the following chapter.

Once in position, the product must be levelled using the adjustable feet. The product must then be connected to the mains power supply and the external compressed air supply.

5.2 Connection of external supply lines

An external power supply and an external compressed air supply are required to operate the product.

5.2.1 Power supply

The installation specifications for the power supply are described below:

Supply voltage	See type plate Three-phase + earth
Frequency	See type plate

Table5: Power supply

The isolation function is provided by the socket through which the unit is connected to the mains.

The earth circuit must be correctly connected inside the control cabinet using the terminal provided for this purpose and a cable of suitable cross-section.

All electrical connections must be carried out by personnel with qualification level 3.

NOTE

A three-pole residual current circuit breaker with sufficient sensitivity to earth faults must be installed on the product's input power supply line.

5.2.2 Pneumatic supply

The system is supplied via an external pneumatic supply line. The requirements are described below:

- Minimum supply pressure of 6 bar
- Pipe fitted with a shut-off valve
- Filtered and dried air
- Hose and connector suitable for the pressure

Connect the compressed air hose to the ¼" female threaded connection on the rear of the extraction bench. Use a ¼" male threaded connector for the connection.

Set the supply pressure to the cleaning system tank to 4 bar using the appropriate pressure regulator.

Model	Tank capacity	Compressed air consumption (L) at pressure vessel (bar) per shot				
		4	4.5	5	5.5	6
95515300, 95515301, 95515311, 95615311	12	48	54	60	66	72
95520500, 95520501, 95520511, 95620511	7	28	31.5	35	38.5	42

Table6 : Pneumatic supply

5.3 Fitting of accessories

5.3.1 Bow and silencer

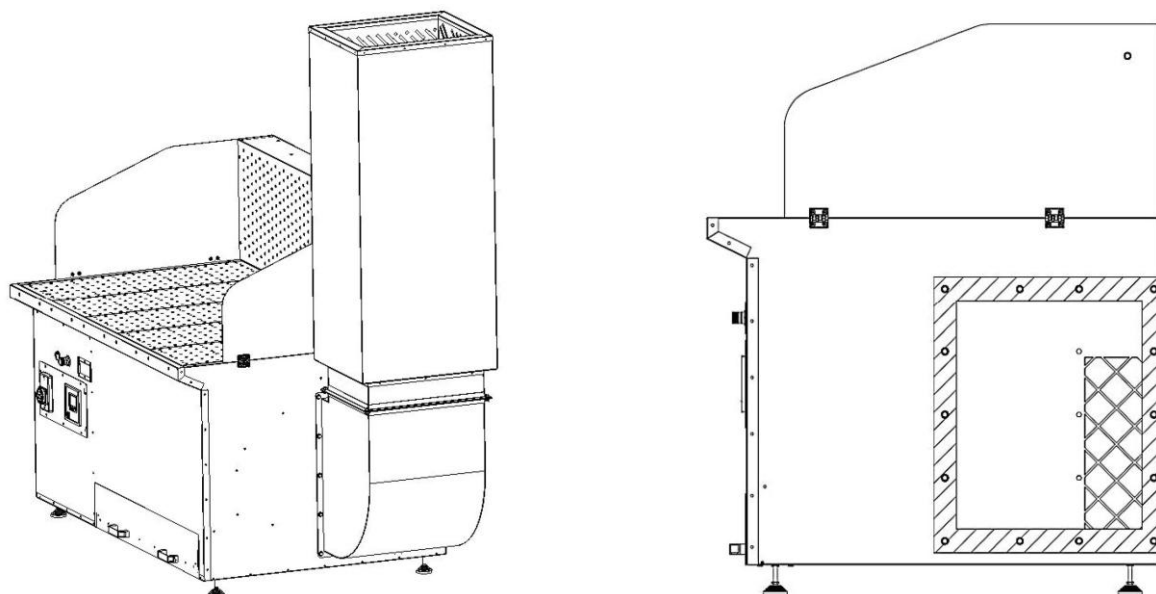


Fig.2 : Elbow with silencer

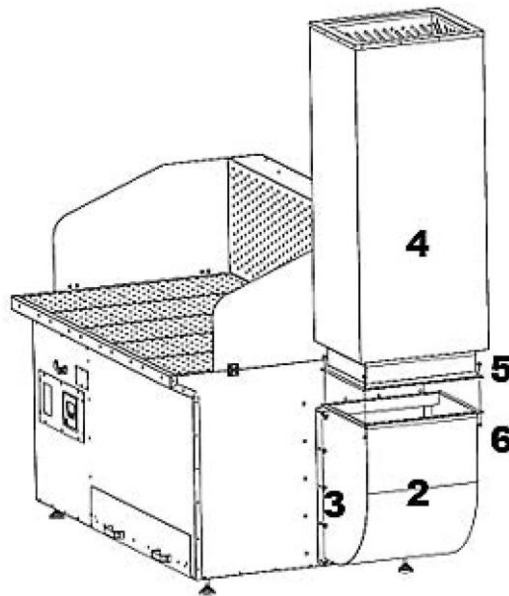


Fig.3 : Elbow with silencer

On the side of the unit with the air outlet, there are 14 M8 threaded holes (1) for securing the outlet elbow (2). These are secured using 14 FR M8x16 hexagon head screws (3).

Once the exhaust pipe has been bolted to the side panel of the unit, the silencer duct (4) is secured to the exhaust pipe (2) using 4 FR M8x16 hexagon head screws (5) and 4 FR M8 nuts (6).

Revised version of the operating instructions

1. Position the outlet elbow (2) on the side of the product with the air outlet.
2. Secure the outlet elbow (2) in the 14 M8 threaded holes (1) using 14 FR M8x16 hexagon head screws (3).
3. Screw the exhaust pipe to the side panel of the unit.
4. Align the silencer duct (4) with the exhaust pipe (2).
5. Secure the silencer duct (4) using 4 FR M8x16 hexagon head screws (5) and 4 FR M8 nuts (6).

5.3.2 HEPA filter at the outlet

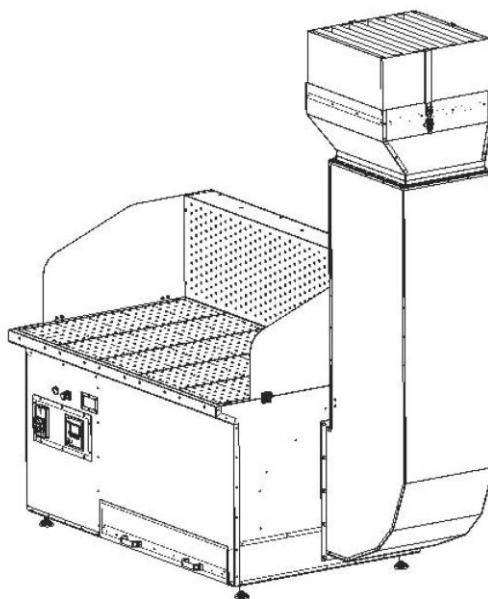


Fig.4 : HEPA filter at the outlet

The HEPA outlet filter with housing must be fitted to the end of the exhaust air elbow accessory. The accessory consists of the exhaust air elbow and the HEPA outlet filter.

The installation of the exhaust air elbow on the product is described in the relevant section.

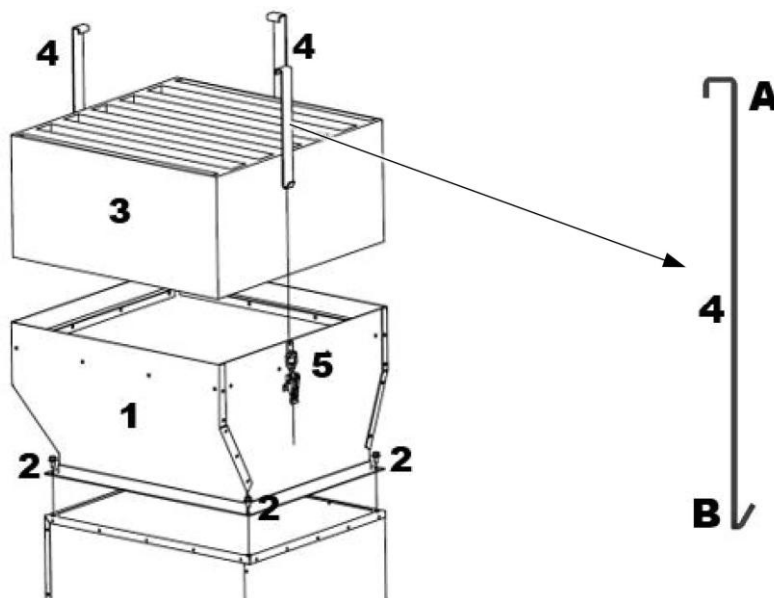


Fig.5 : HEPA filter at the outlet

1. Position the HEPA filter housing (1) on the flange at the end of the exhaust elbow.

2. Secure the HEPA filter housing (1) with four FR M8x16 hexagon head screws (2).
3. Insert the HEPA filter into the housing. Ensure that the side with the seal lies flush against the inner edge of the housing.
4. Secure the HEPA filter to the housing using three mounting brackets (4).
5. To do this, attach end A to the side of the filter.
6. Attach end B to the hook of the lever lock (5) on the HEPA filter housing.

5.3.3 Side panels

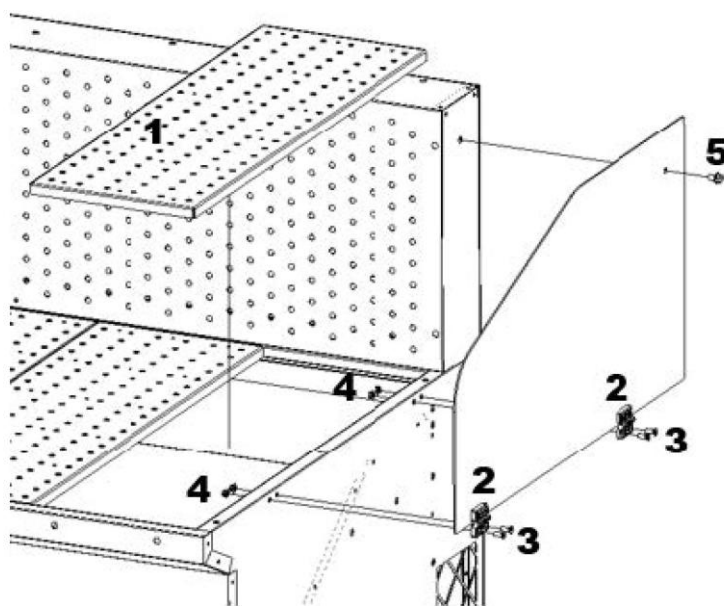


Fig.6 : Side walls

1. Remove the worktop (1) on the relevant side.
2. Position the hinges (2) on the side panels of the worktop side trim.
3. Secure the hinges (2) using 4 M6x20 countersunk head screws (3) and M6 FR nuts (4).
4. Position the side panel against the extraction front (5).
5. Secure the side panel with one FR M8x20 hexagon head screw.
6. Once assembly is complete, return the worktop to its original position.

5.3.4 Anti-scratch strips on the contact surface

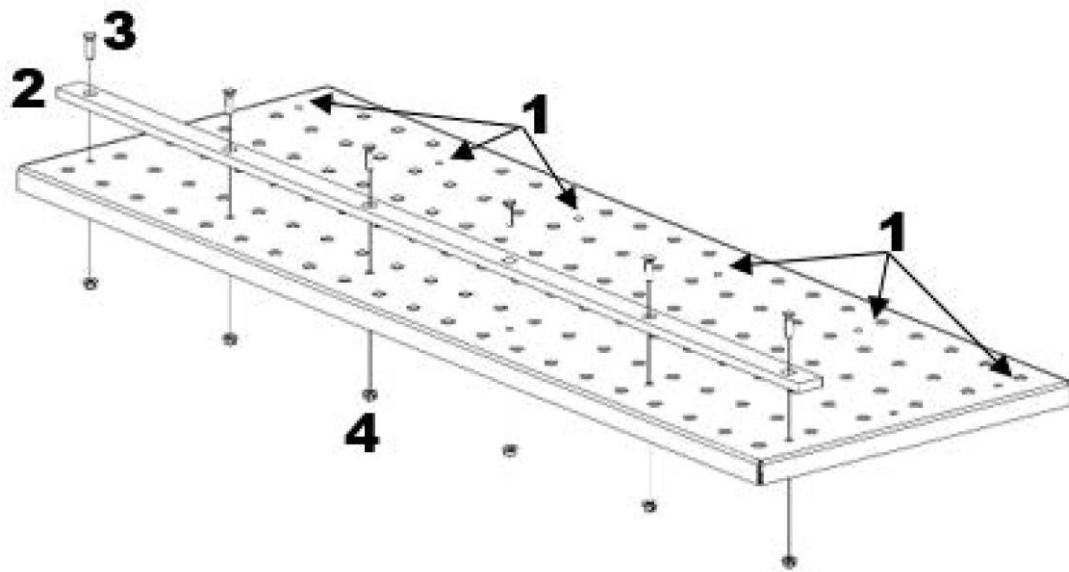


Fig.7 : Anti-scratch strips on the contact surface

1. Align the Teflon strips (2) with the rows of holes in the worktop.
2. Secure each Teflon strip to the worktop using M5x20 countersunk head screws (3) and M5 FR nuts (4).

5.3.5 Castors

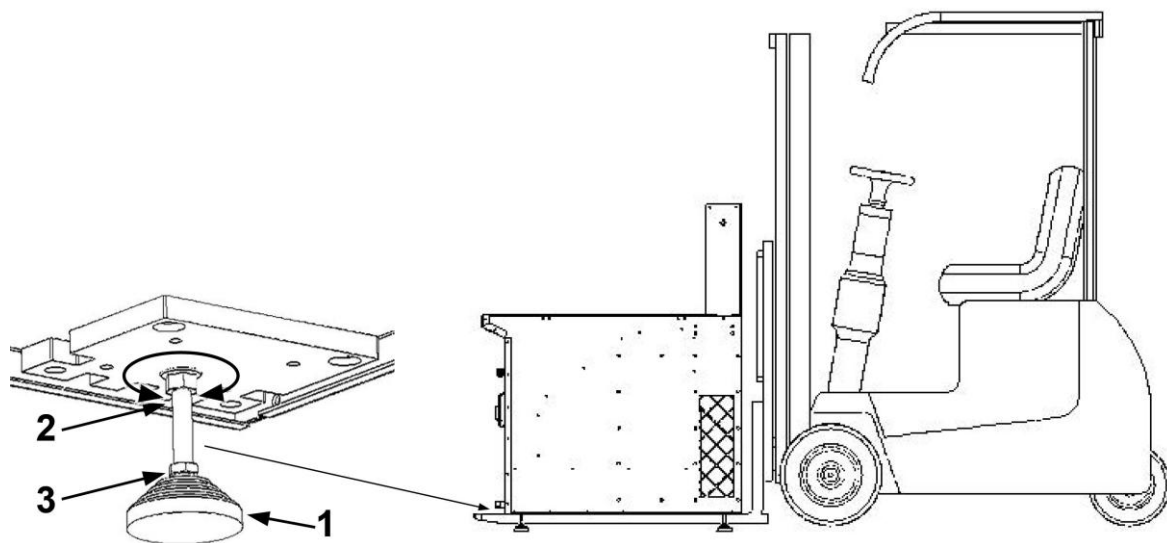


Fig.8 : Adjusting/removing machine feet

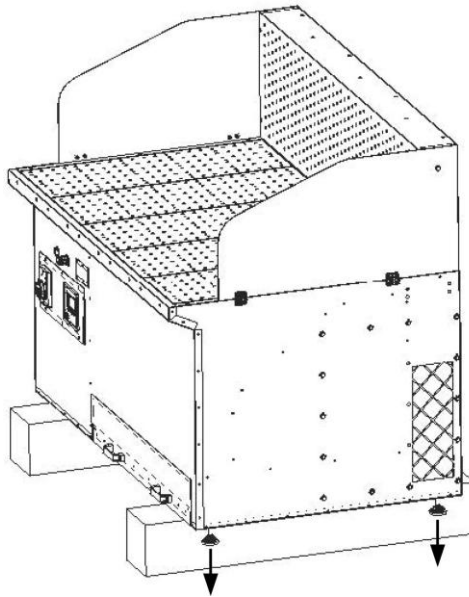


Fig.9 : Removing the machine feet

1. Adjust the height of the feet (1) so that the forks of the forklift truck fit under the product's frame.
2. To adjust, loosen the nut (2) and slide it a few centimetres away from the plate.
3. Unscrew the threaded rod on the leg (3) until the required height for the forklift forks to pass underneath is reached.
4. Tighten the nut (2) again until it is flush with the plate.
5. Lift the product with the forklift to a height of at least 200 mm above the floor.
6. Insert the forklift's forks into the positions specified in the relevant appendix to the manual.
7. Ensure that the forks extend beyond the outline of the product.
8. Place supports under the product so that it is raised at least 200 mm above the floor and rests on sturdy supports.
9. Remove the feet (1) by loosening the nut (2) and unscrewing the threaded rod (3) completely.

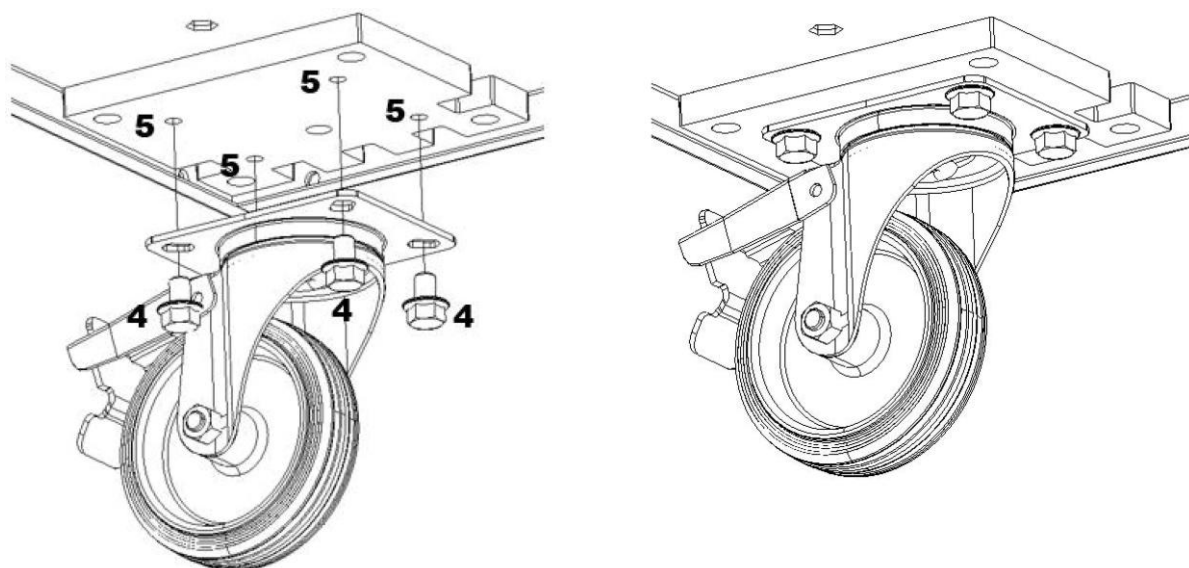


Fig.10 : Fitting the wheels

The wheel set consists of four wheels with brackets, two of which have brakes and two without, as well as the corresponding fixing screws.

The wheels with brakes are to be fitted to the front of the product. Each wheel is to be secured to the bracket using four FR M8x12 hexagon head screws (4) in the four threaded holes (5) of the bracket.

5.3.6 Position of the clamp



Fig.11 : Arrangement of the clamps

Pairs of M8 threaded holes (1) are located at the front edge of the product's work surface for securing the clamping jaw mounting plate.

1. Place the clamping jaw mounting plate (2) onto the work surface of the product.
2. Secure the jaw holder plate (2) to the product using two FR M8x20 hexagon head screws (3).

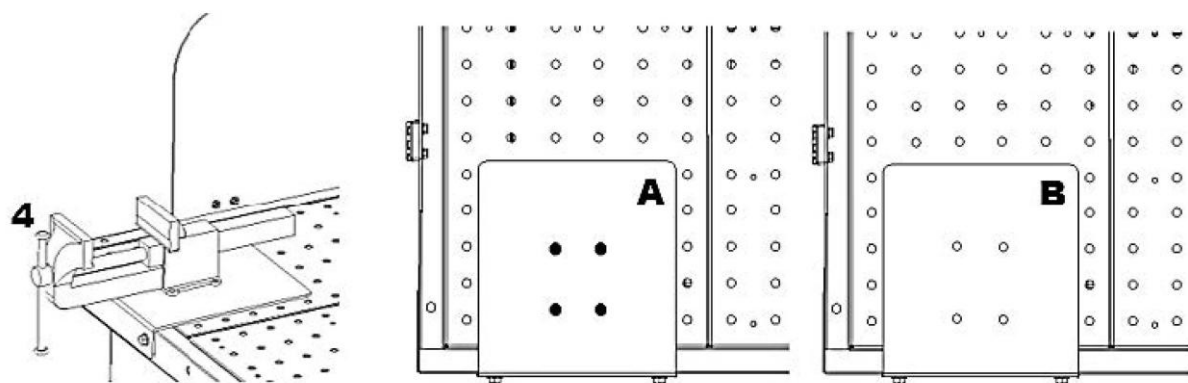


Fig.12 : Vice

3. Align the vice (4) (not supplied) in the desired position on the plate (2).
4. Mark the positions of the fixing holes on the plate (A).
5. Unscrew the plate from the workbench.
6. Drill the mounting holes in the plate.
7. Refit the plate to the workbench.
8. Mark the drilling positions on the worktop (B).
9. Drill the holes in the worktop.

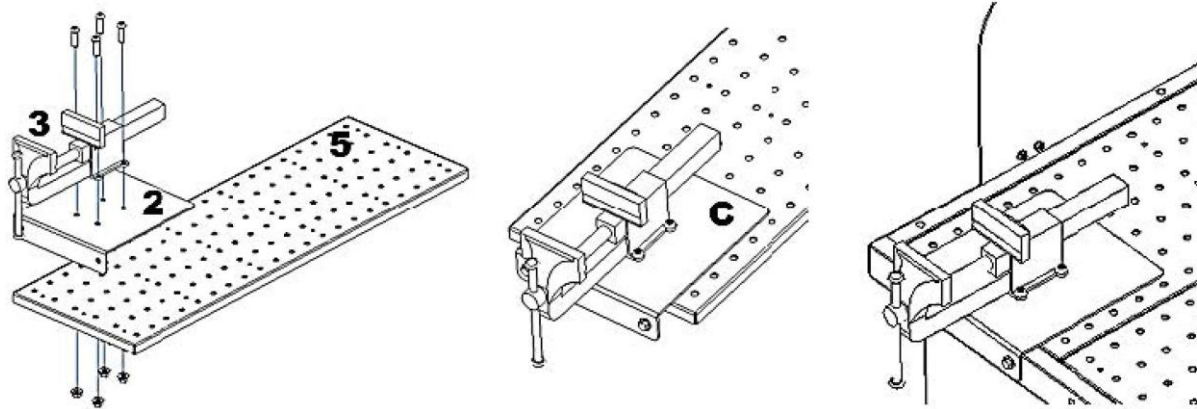


Fig.13 : Vice

10. Secure the vice (3) and vice plate (2) to the worktop (5) using suitable bolts and nuts.
11. Only use bolts and nuts whose dimensions are suitable for the vice being used.
12. Please note that these bolts and nuts are not included with the plate.
13. Use the resulting assembly as assembly (C).
14. Position assembly (C) on the product.
15. Secure assembly (C) to the product using 2 FR M8x20 hexagon head screws (3).

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 General information

The product is controlled via the control elements fitted to the machine.

Operation during the normal working cycle must only be carried out by persons with Qualification 1.

The product is disconnected from the mains supply by pulling out the mains plug. The mains plug serves as the disconnecting device.

6.3 Operating and control devices on the product

The following illustration shows the display and control units fitted to the product.

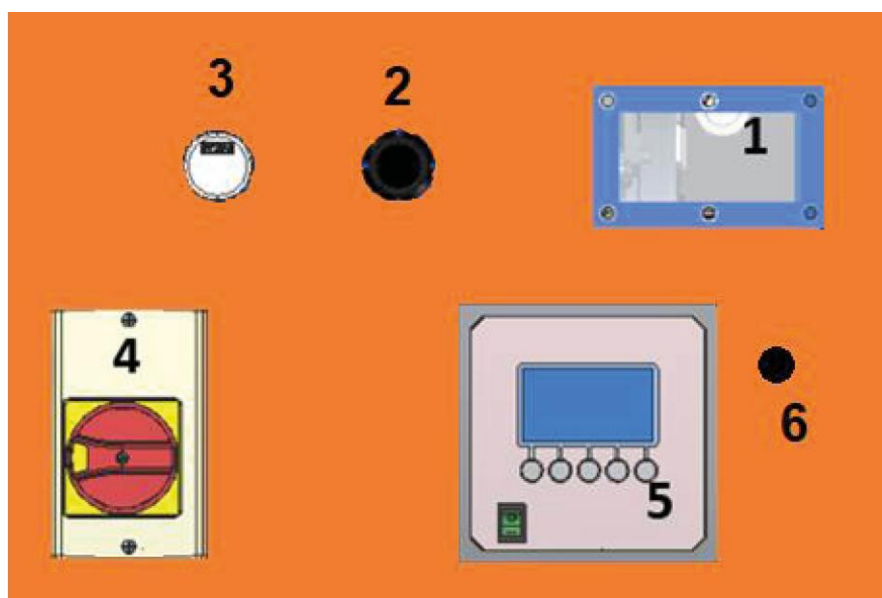


Fig.14 : Control unit

Item	Description
1	Viewing window – Visual inspection of the direction of rotation of the fan impeller.
2	Pressure regulator – for adjusting the cleaning pressure
3	Pressure gauge – applied cleaning pressure
4	Rotary switch (fan ON/OFF)
5	Control – for adjusting the cleaning cycle
6	Air balancing – filter monitoring

Table7 : Control

The control unit is an electronic device for controlling the pneumatic cleaning of the product.

A pressure transducer fitted to the control unit measures the differential pressure. This measured value is used to determine the degree of filter contamination.

The control unit is designed for a supply voltage of 24 V DC $\pm$ 10 %. The power consumption is 25 W. Electrical protection is provided by a 3 A fuse.

Display and keypad

Description	Image
A membrane keypad with five buttons is located on the front of the product. The membrane keypad is used to operate the control unit and access its functions. After switching on, the control unit displays the product name and the installed firmware version.	

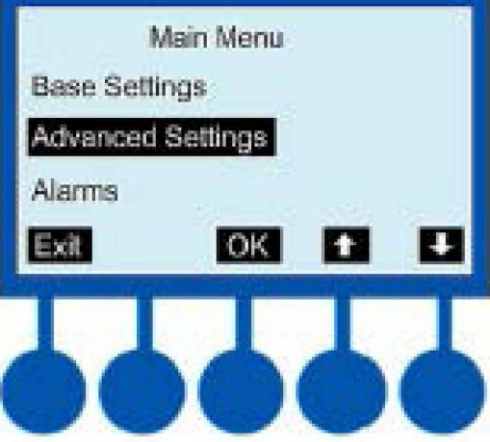
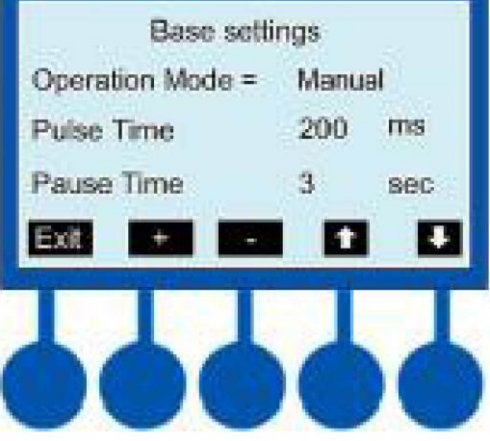
Once switched on, the display shows the product's operating information. This includes the differential pressure value, the selected operating mode, the cycle time and the operating status. Press the 'MENU' button to access the control unit's configuration menu.	
On the menu page, the desired menu item is selected using the '↑' and '↓' buttons. Press the 'OK' button to select the highlighted menu item. Editable parameters are displayed. The 'OK' button is also used to confirm selections and to mute any active alarms.	
On the parameter page, use the "↑" and "↓" buttons to select the desired parameter. Use the "+" and "-" buttons to change the parameter value. Press the "EXIT" button to return to the previous screen. Any changed values are saved.	

Table8 : Display and Keypad

Main menu and factory settings

The following section provides an overview of selected functions of the control unit and the corresponding factory settings.

Detailed information on the control unit can be found in the relevant technical documentation.

Basic settings		Default setting	
Operating mode	Manual (dP value is displayed but not used) Automatic Automatic with forced cycle Proportional	Automatic mode In automatic mode, the control unit manages the pneumatic cleaning process based on the degree of contamination of the filters. If the pressure exceeds the start threshold, the cleaning cycle begins. If the pressure falls below the stop threshold, the cleaning cycle is interrupted. The cycle restarts as soon as the pressure rises above the set start threshold again. The timing of the cleaning is determined by the settings for pulse time and pause time.	
Pulse time	Activation time of the solenoid valve Adjustable values: 0.05 s – 5.00 s in increments of 0.01 s	0.20 sec.	
Pause time	Cleaning pause between solenoid valves	180 sec.	
Number of outputs	Number of connected outputs	1	
Start threshold	Start threshold for the cleaning cycle	BC15 PLUS 1 kPa	BC20 PLUS 0.9 kPa
Stop threshold	Stop threshold for the cleaning cycle	BC15 PLUS 0.8 kPa	BC20 PLUS 0.7 kPa
Advanced settings		Default	
Fan mode	Fan confirmation mode	dP	
Fan threshold	dP threshold for fan activation upon confirmation, when fan mode = dP	0.05 kPa	
PCC cycles	Number of post-cleaning cycles after the fan has switched off	3	
Pause during PCC	Pause between post-cleaning valves during a cycle whilst the fan is switched off	30 sec.	

Pre-coating	Pause between the post-cleaning valves during a cycle whilst the fan is switched off	Disabled
Alarms		Standard
Maintenance alarms	Alarm triggered at maintenance interval	300 h
Maintenance interval	Maintenance interval in tens of hours (e.g. 1 = 10 h, 10 = 100 h)	
Alarm at minimum differential pressure	Activation of the 'Alarm at minimum differential pressure' function	Deactivated
Maximum differential pressure	Maximum threshold value for the dP alarm (filter blockage), message delayed by 20 seconds	1.3 kPa
Exclude EV in SC	If the short-circuit valve is set, it is excluded from the cycle.	Deactivate

Table9 : Main menu and factory settings

Alarms

The control unit monitors the product during start-up and operation. Detected faults are displayed as alarms.

The possible alarms and the associated corrective actions are described below.

Code	Description	Operation
E01	Output voltage setting set to 24 VDC Jumpers detected: Vac	- If you require 24 VDC, switch off the unit and set the AC/DC jumpers to DC. - If you want 24 V AC, press OK, then SET, use the '+' and '-' buttons to select the output voltage setting function, select 24 V AC and confirm with OK.
E02	Output voltage set to 24 V AC VDC jumper detected	- If you require 24 V AC, switch off the device and set the AC/DC jumpers to AC. - If you require 24 V DC, press OK, then SET, use the '+' and '-' buttons to select the output voltage setting function, select 24 V DC and confirm with OK.

E03	Setting the output voltage Set to 24 V AC or DC. Voltage outside the range detected	- If you need to use a 24 V valve, switch off the unit and set the jumpers to select 24 V as the output voltage. - However, if the jumpers are already in the correct position, press OK and then SET, use the '+' and '-' buttons to select the 'Set output voltage' function, set the jumpers to 115 or 230, and press OK.
E04	Output voltage set to 115 V AC. Voltage outside the range detected.	If you need to use a 115 V valve, switch off the unit and set the output voltage jumpers to 115 V. - However, if the jumpers are already in the correct position, press OK and then SET, use '+' and '-' to select F05, set the jumper to 115 or 230, and press OK.
E05	Output voltage set to 203 V. Voltage outside the range detected.	- If you need to use a 230 V tube-based device, switch the device off and set the output voltage jumpers to 230 V. - However, if the jumpers are already in the correct position, press OK and then SET, use '+' and '-' to select the 'Set output voltage', set the jumpers to a24, d24 or 115, and press OK.
E06	Solenoid valve current below the minimum threshold or solenoid valve not connected.	Check that the solenoid valve mentioned in the error message is correctly connected. The alarm will reset automatically once the fault has been rectified.
E07	Solenoid valve current above the maximum value.	Check that the solenoid valve reported in the fault is correctly connected. The alarm will reset automatically once the issue has been resolved.
E08	Short circuit on one or more outputs. The E08 code alternates with an indication of the affected output. It is displayed as 'Uxx', where xx is the output number and the dP value.	Switch the unit off and on again after checking the solenoid valve connections.
E09	The maximum pressure value dP has been exceeded. Alarm triggered when the maximum dP value is reached; filter blockage detected for longer than 20 seconds.	Check the condition of the filter elements.
E10	The hardware offset of the dP sensor is outside the range.	The dP sensor's self-calibration has detected a value outside the range. Disconnect the air hoses and repeat the procedure. If the alarm persists, contact technical support.
E11	The maintenance interval has been reached.	Carry out the maintenance.

E12	The dP sensor has reached its limit value Limit value reached. The message is displayed immediately.	Check the condition of the filter elements. WARNING: Operating the unit under these conditions may damage it.
E13	Alarm triggered when the minimum dP value falls between the dP threshold for fan activation and the minimum differential pressure (dP) alarm in the event of a defect in the sleeve or cartridge. The alarm is triggered after a fixed delay of 60 seconds.	Check the condition of the filter elements.
E14	Indicates that a valve with a short circuit has been excluded from the cycle. The display of code E14 alternates with the display of a short circuit at the output. It is displayed as Uxx, where xx is the number of the corresponding output. An output is considered short-circuited if the fault condition persists for 3 consecutive activations. A fault-free activation resets the counter.	Switch the unit off and on again after checking the installation of the solenoid valves.

Table10 : Alarms

6.4 Description of operation

The system operates in automatic mode.

The product is switched on using the designated start button and then operates continuously.

6.4.1 Commissioning and preliminary checks

Before switching on the system, the following points must be checked:

- Check that the compressed air supply is correctly connected.
- Check that the product is correctly connected to the mains supply using the appropriate plug.
- Check that the outlet box is correctly connected.

CAUTION

Before starting the product, check that the connected intake points are open and free of foreign objects.

Ensure that no materials or objects that are not intended for use with the product can be sucked in.

Improper use may result in damage to the product.

6.4.2 Commissioning

Once the start-up preparations and the necessary visual and functional checks have been carried out, proceed as follows:

Switch on the product (fan) – turn the switch or selector switch to the ‘ON’ position

⚠ DANGER

The product must not be started if one or more filter cartridges have been removed or are not correctly fitted.

NOTE

Once operation has finished, leave the power supply and compressed air supply switched on so that the automatic filter cleaning cycle can be carried out.

CAUTION

If the cleaning cycles are not carried out, the filter performance of the cartridges will deteriorate prematurely. This will increase maintenance requirements.

6.4.3 Shutdown procedure

In automatic mode, the product can be switched off as follows:

during operation: set the selector switch or switch to “OFF”

at the end of the shift: Once the product has come to a standstill, unplug the mains plug from the socket

NOTE

Only disconnect the product from the mains once the post-cleaning cycle has been completed, provided that post-cleaning has been set.

6.4.4 Checking the direction of rotation

To check the direction of rotation, proceed as follows:

1. Switch on the product using the start button.
2. Check the direction of rotation of the electric motor or electric fan through the relevant viewing window.
3. Check that the actual direction of rotation matches the direction indicated by the arrow.
4. Switch off the appliance using the stop button.
5. If the direction of rotation is incorrect, swap two phases of the power supply.
6. Carry out the check again.

NOTE

Work on the electrical power supply must only be carried out by qualified personnel. Before swapping phases, the product must be de-energised and secured against being switched on again.

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.

8 MAINTENANCE INSTRUCTIONS

8.1 Maintenance – General Information

This chapter describes the maintenance work to be carried out on the product.

Maintenance tasks are categorised as follows:

- routine maintenance,
- extraordinary maintenance.

Routine maintenance comprises all scheduled work required to maintain the safe and proper functioning of the product.

Extraordinary maintenance comprises all work that may be necessary to restore normal operation following breakdowns or malfunctions.

The work described below may only be carried out by personnel qualified to do so. Qualification level 2 is required.

A qualified person is required for every intervention.

Maintenance work must only be carried out when the product is disconnected from the power supply on all poles.

8.2 Safety instructions for maintenance

The following safety instructions must be strictly observed during maintenance work.

⚠ DANGER

Before starting any maintenance work, disconnect the product from the power supply at all terminals.

⚠ DANGER

Before carrying out maintenance work on the control cabinet, disconnect the product from the power supply at all terminals and wait at least 1 minute until any residual energy in the circuits has dissipated.

⚠ DANGER

Maintenance work must only be carried out by qualified personnel who are familiar with the information in this operating manual and the product-specific residual risks.

8.3 Routine maintenance

To ensure the product continues to function safely and correctly, the specified maintenance work must be carried out in accordance with the stipulated operating hours. Adherence to the maintenance schedule helps to prevent breakdowns, malfunctions and faults. The table below sets out the type, interval and section of the respective maintenance task.

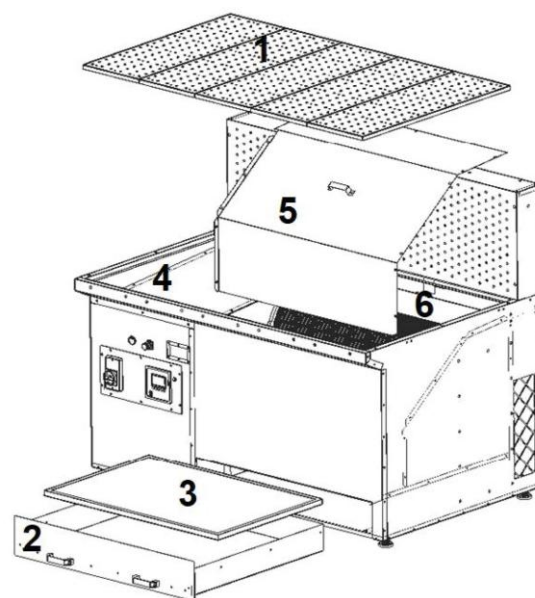


Fig.15 : Routine maintenance

Frequency	Description of the task	Item
Daily	Cleaning the product	1
At the start of each shift and/or when switching off the fan	Empty the dirt collection tray. Clean the pre-filter. Also clean any optional pre-filters on the housing, if fitted.	2
See the relevant section	Checking, replacing the filter elements and regular maintenance	2
Monthly	Check that screws and bearings are tight.	-
Quarterly	Check the fan belt tension	4
Every six months	Lubricate the bearings.	3

Table 11 : Routine maintenance

CAUTION

Unusual vibrations, noises or unacceptable electrical operating parameters may lead to malfunctions or damage to the product.

- Monitor the fan unit for the first 2 hours of operation following installation.
- Check the voltage and current consumption.
- Observe the motor's nameplate specifications.
- Tension the belt if necessary.

CAUTION

Adherence to the specified maintenance intervals and the use of approved spare parts are essential for the safe and proper functioning of the product. Deviations may result in damage to the product and impaired functionality.

8.4 Cleaning the product

The exterior surfaces of the product and the work area must be cleaned thoroughly. Use a vacuum cleaner or soft, dry cloths lightly moistened with alcohol or a mild, non-foaming cleaning solution.

The area inside the protective guards must be cleaned thoroughly. Dust and residues must be removed.

8.4.1 Checking and replacing the filter elements

The control display provides information on the condition of the filter elements.

⚠ DANGER

A suitable face mask must be worn when cleaning the filters (the choice of mask is at the user's discretion, depending on the products used).

CAUTION

A full post-cleaning cycle must be carried out before inspecting and replacing the filters.

Regular maintenance must be carried out in accordance with the following table

Interval (hours)	Type of action	Element
8	With the fan switched off but the compressed air supply open, carry out post-cleaning cycles.	Filter cartridges
80	Cleaning the metal filters. Pull out the drawers (item 2) and remove the metal pre-filter (item 3). Check that they are undamaged and replace the filters if damaged; otherwise, clean the pre-filters with compressed air. Place the pre-filters in the drawer and reinsert the drawers into the unit.	Metal grilles

Table12 : Maintenance

When carrying out maintenance work on filter elements, check whether the display shows any images indicating a filter check or blockage:

Display message	Action	Element
E09	Replace the filter	Filter cartridges

Table13 : Maintenance

To replace the filter cartridges correctly, proceed as follows:

1. Disconnect the compressed air supply.
2. Carry out a pneumatic purge to empty the compressed air tank.
3. Disconnect the product from the mains supply.
4. Pull out the drawers (item 2) and remove the metal pre-filter (item 3).
5. Check the metal pre-filter for damage. Replace any damaged filters.
Clean undamaged filters by blowing them out with compressed air.
6. Remove the worktop from the fume cupboard by lifting the panels.
7. Unscrew the protective covers from the upper part of the cartridges (item 3).
8. Loosen the three fastenings on each cartridge.
9. Turn the cartridge and pull it out upwards (item 4).

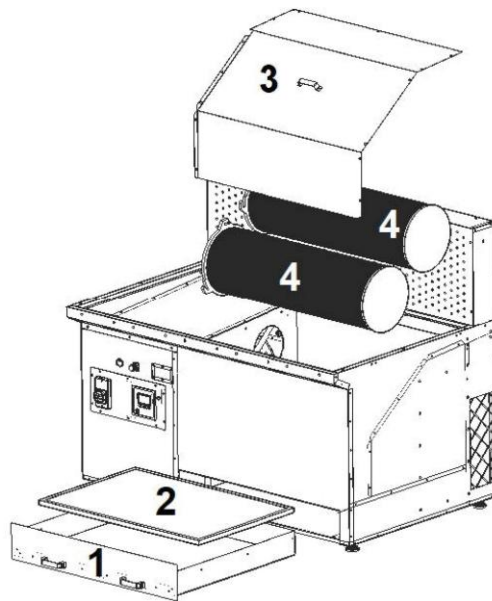


Fig.16 : Changing cartridges

CAUTION

Only filter cartridges whose dimensions and type correspond to the specific model of the product may be used. Only original filter cartridges must be used.

The filter cartridge must be inserted from above, guided into the three designated mounting points and turned until it clicks fully into place.

Once the filter cartridge has been fitted, carry out the following steps:

- Check that the filter cartridge is correctly seated

- Tighten the fasteners
- Fit the protective covers
- Insert the pre-filters into the drawers
- Insert the drawers into the unit
- Replace the existing H13 filter in the outlet duct
- Connect the product to the mains supply

Once the work is complete, the product is ready for use.

8.4.2 Tensioning and replacing the belt

All work must be carried out using suitable tools.

- Existing belts must be checked for correct tension and for damage. Belts with fraying must be replaced. In addition, check that the grooves of the pulleys are clean and free from deposits.
- Insufficient belt tension can lead to the belts slipping, increased wear, grinding noises, increased vibrations and unusual stress on the components.
- Excessive belt tension can lead to excessive stress on the bearings and the shafts of the fan and motor. This can reduce the service life of the affected components. In addition, increased vibrations and unusual stress on components may occur.

To access the extraction area, first remove the worktops (1). Then remove the cover plate underneath. To do this, completely unscrew the screws (2) and loosen the screws (3). Once the cover plate has been removed, the extractor fan and the electric motor are accessible.

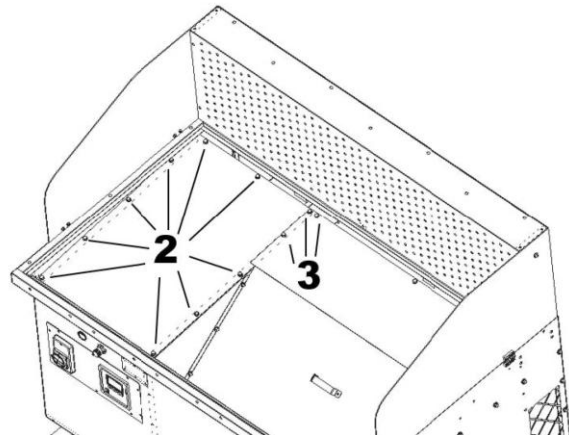
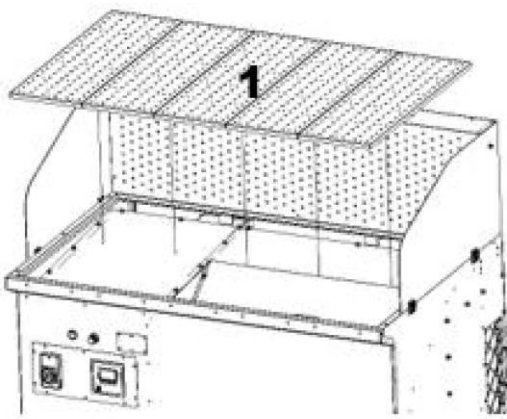


Fig.17: Tensioning the belts

The tension of the drive belt between the fan and the electric motor must be checked, taking the safety measures described into account, and adjusted if necessary.

The belt can be checked by assessing its deflection and twist. When pressure is applied to the centre of the longest free section of the belt, the deflection should be approximately 10 to 15 mm. If the deflection is greater than this, the belt is too loose. If no significant deflection can be detected, the belt is too tight.

In addition, the belt tension can be checked by twisting the belt. To do this, grasp the belt at its longest free section between two pulleys. If it can be twisted by approximately 90°, the tension is correct. A significantly greater degree of twist indicates that the belt tension is too low.

To adjust the belt tension, loosen the nut (4). Tightening the screw (3) increases the belt tension. Loosening the screw (3) reduces the belt tension. Once adjusted, retighten the nut (4).

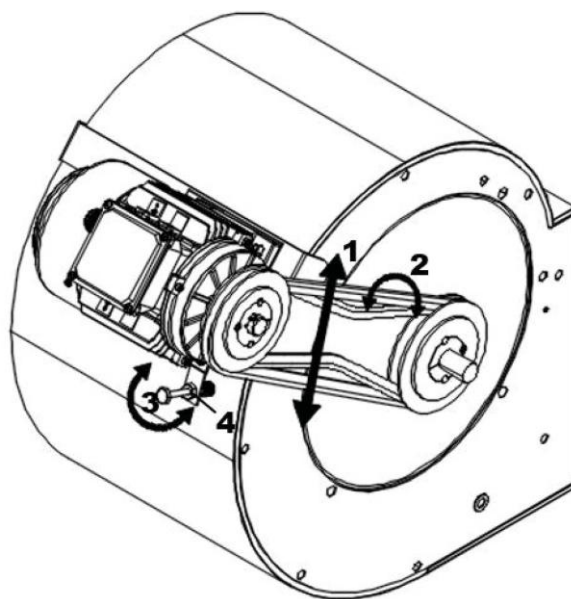


Fig.18: Tensioning the belts

8.4.3 Lubrication of the bearings

Work on the bearings must only be carried out using suitable tools.

To access the bearing area, remove the worktops (1). Then remove the cover plate underneath. To do this, fully loosen the screws (2) and loosen the screws (3).

Once the cover plate has been removed, the fan and electric motor are accessible.

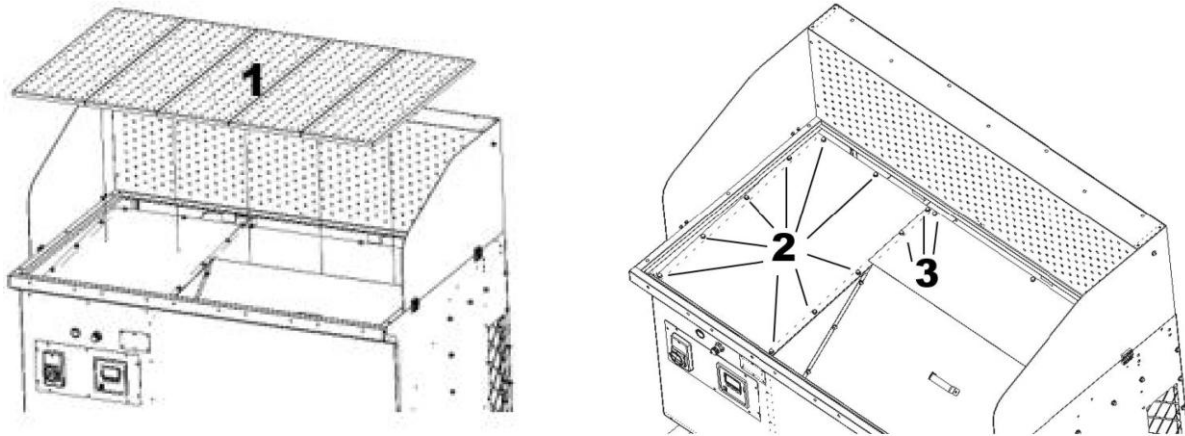


Fig.19 : Lubrication of the bearings

8.5 Extraordinary maintenance

Extraordinary maintenance covers all work involved in replacing faulty components.

If you encounter difficulties replacing or sourcing components, please contact the manufacturer's customer service department.

⚠ WARNING

Warning regarding unsuitable spare parts

The use of non-original or non-specified spare parts may pose a risk.

Unsuitable spare parts may alter the product's original configuration. This may result in personal injury, damage to property or damage to the product. No liability is accepted for any resulting damage.

Personnel requirements

Extraordinary maintenance work may only be carried out by personnel with qualification level 2 or 3.

Prerequisites

Before starting work:

- Disconnect the product from the mains
- Secure against being switched on again
- Use only suitable spare parts

8.6 Troubleshooting – Errors and Faults

There is a wide range of faults that may occur during the operation of the machine or its components. The most common faults are discussed below, along with their probable causes and the corresponding remedial measures.

If the fault persists despite the recommended measures, please contact EFFE GROUP S.r.l. and specify the fault and the machine's operating conditions. Information on fault diagnosis and rectification can be found in the table below.

Fault	Causes	Solution
Product not functioning	No power supply	Check the connection to the mains supply.
	Circuit breaker has tripped or fuse has blown	Reset the circuit breaker. Replace the fuse. If the fault persists, contact an authorised technical support service.
	Cable not connected	Contact an authorised technical support service.
Insufficient suction power	Exhaust grille blocked	Clear the blockage.
	Pre-filter or filter blocked	Check that the pre-filters are clean and undamaged. Check that the cleaning system is working properly.
		Replace the filter if necessary. Check whether the material being extracted is suitable for the filter being used.
	Incorrect direction of rotation of the fan	Check the direction of rotation of the fan. See chapter: Changing the direction of rotation of the motor.
Motor does not start	Discharge pipe blocked	Clear the blockage
	Control panel has no power supply	Supply power to the control panel.

	The internal cable to the control cabinet has come loose.	Contact the authorised customer service department
	Motor faulty.	Contact an authorised service centre.
	Reset the residual current circuit breaker	Reset the circuit breaker.
Filter cleaning not working	The switch on the control unit for pneumatic cleaning is set to 'OFF'	Set the switch on the control unit for pneumatic cleaning to "ON".
	Fuse blown	Replace the fuse. Refer to the relevant documentation.
	Incorrect parameter settings	Refer to the relevant section of the manual and the documentation for the pneumatic cleaning control unit. If the fault persists, contact an authorised technical support service.
	No compressed air supply	Connect a compressed air supply at 4 bar.
	Compressed air is damp	Fit a compressed air filter and a compressed air dryer.
Increased vibration or noise from the fan	Belt not tensioned	Tighten or replace the belt.

Table14 : Faults and failures

8.7 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!

9 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.

9.1 Plastics

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

9.2 Metals

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

9.3 Filter elements

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

10 Annex

DEALER DETAILS

Company name:	KEMPER GmbH
Address:	Von-Siemens-Str. 20 48691 Vreden – Germany

Table15 : Dealer details

MANUFACTURER'S DETAILS

Company name:	EFFFE GROUP S.R.L.
Address:	Via di Capalle, 51/53 – 50041 Calenzano (FI) – Italy

Table16 : Manufacturer's specifications

MACHINE DATA

Machine type:	VACUUM TABLE WITH CARTRIDGE FILTERS AND PNEUMATIC CLEANING
Model	BC EIT

Table17 : Product data

NOTE

The product identification details can be found on the identification sheet enclosed with this manual.

10.1 Technical data

Designation	Table 1,500 mm [59.1 in] without rear panel	Table 1,500 mm [59.1 in] with rear panel
Type	95515300	95515301
Weight kg [lbs]	410 [904]	410 [904]
Max. flow rate m ³ /h [CFM]	3,300 [1,942]	3,300 [1,942]
Power kW [hp]	1.5 [2.01]	1.5 [2.01]

Three-phase voltage V	400	400
Frequency Hz	50	50
Current A	3.5	3.5
Maximum load kg [lbs]	150 [331]	150 [331]
Working pressure mmH ₂ O	60	60
Cartridge No.	2	2
Filter area m ² [ft ²]	32 [344]	32 [344]
Number of valves	1	1
Noise level dB(A)	73	73

Table18 : Technical Specifications

Designation	Table 1,500 mm [59.1 in] ATEX with rear panel	Table 1,500 mm [59.1 in] ATEX with rear panel
Type	95515311	95615311
Weight kg [lbs]	410 [904]	470 [1037]
Max. flow rate m ³ /h [CFM]	3,300 [1,942]	5,000 [2,943]
Power kW [hp]	1.5 [2.01]	3.0 [4.02]
Three-phase voltage V	400	460
Frequency Hz	50	60
Current A	3.5	3.5
Maximum load kg [lbs]	150 [331]	150 [331]
Working pressure mmH ₂ O	60	60
Cartridge No.	2	2
Filter area m ² [ft ²]	32 [344]	32 [344]
Number of valves	1	1
Noise level dB(A)	73	73

Table19 : Technical data

Designation	Table 2,000 mm [78.7 in] without rear panel	Table 2,000 mm [78.7 in] with rear panel
Type	95520500	95520501
Weight kg [lbs]	470 [1037]	470 [1037]

Max. flow rate m ³ /h [CFM]	5,000 [2,943]	5,000 [2,943]
Power kW [hp]	3.0 [4.02]	3.0 [4.02]
Three-phase voltage V	400	460
Frequency Hz	50	60
Current A	6.5	6.5
Maximum load kg [lbs]	150 [331]	150 [331]
Working pressure mmH ₂ O	60	60
Cartridge No.	4	4
Filter area m ² [ft ²]	40 [431]	40 [431]
Number of valves	2	2
Noise level dB(A)	78	78

Table20 : Technical data

Designation	Table 2,000 mm [78.7 in] ATEX with rear panel	Table 2,000 mm [78.7 in] ATEX with rear panel
Type	95520511	95620511
Weight kg [lbs]	470 [1037]	470 [1037]
Max. flow rate m ³ /h [CFM]	5,000 [2943]	5,000 [2943]
Power kW [hp]	3.0 [4.02]	3.0 [4.02]
Three-phase voltage V	400	400
Frequency Hz	50	50
Current A	6.5	6.5
Maximum load kg [lbs]	150 [331]	150 [331]
Working pressure mmH ₂ O	60	60
Cartridge No.	4	4
Filter area m ² [ft ²]	40 [431]	40 [431]
Number of valves	2	2
Noise level dB(A)	78	78

Table21 : Technical data

NOTE

If the bench is fitted with:

- a 'box-type construction', the weight increases by approx. 15 % kg;
- a 'reinforced top', the weight increases by approx. 5 % kg;
- "Rectangular duct" increases the weight by approx. 35 kg;
- "Silencer" or "HEPA exhaust air" increases the weight by approx. 75 kg.

10.2 Filter cartridge data

The product can be supplied with various types of filter cartridge. The following tables list the specifications of the available filter cartridges.

FILTER MEDIA	POLYESTER WITH TEFLON MEMBRANE	ANTISTATIC POLYESTER WITH TEFLON MEMBRANE
Number of pleats	175	175
Weight [g/m ²]	290	280
BIA classification	M	M
Maximum operating temperature in continuous operation	70 °C	70 °C
Height 600 mm	CAR3250600PO4A-00	CAR3250600PO4A-00
Height code 1000 mm	CAR3251000PO4A-00	CAR3251000PA4A-00

Table22 : Filter cartridges

Service class according to BIA classification	L	M	H
Concentration	Dust filtration with AGW values > 1 mg/m ³	Dust filtration with AGW values ≥ 0.1 mg/m ³	Dust separation with AGW values, dust from hazardous carcinogenic substances and dust containing pathogens
Maximum permissible release	< 1.0 %	< 1.0%	< 0.005%

Table23 : Filter values

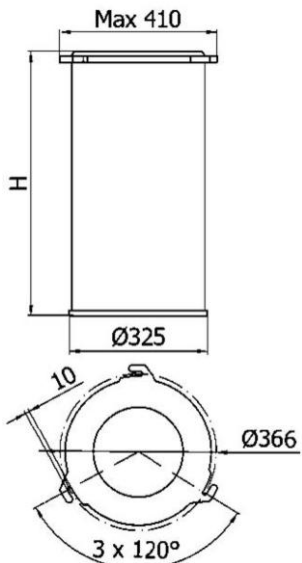
Model	Number cartridges	Diameter (mm)	Height (mm)	Filter area (m²)	Flange
BC 15 PLUS	2	325	1020	15	
BC 20 PLUS	4	325	620	10	

Table24 : Filter dimensions

10.3 Information on metal filters

The product can be supplied with various metal filters. The table below lists the specifications of the filters supplied for the different models.

Metal mesh	
Efficiency class (CEN EN779)	G2
EFFICIENCY CLASS EN ISO 16890:2016	GROUP ISO ePM10 50% (ePM1 8% – ePM2.5 17% – ePM10 53%)
Average gravimetric efficiency (sp. 23 mm)	70
Max. operating temperature	200 °C
Relative humidity	100 %

Table25 : Filter material

Model	Number of metal filters	Dimensions [mm]
BC 15 PLUS	1	678 x 1000 x 23
BC 20 PLUS	2	678 x 600 x 23

Table26 : Filter dimensions

10.4 Machine design

Model	Power supply
BC 15 PLUS	400 V / 3-phase / 50 Hz 460 V / 3-phase / 60 Hz
BC 20 PLUS	400 V / 3-phase / 50 Hz 460 V / 3-phase / 60 Hz

Table 27 : Machine model

NOTE

The technical and dimensional differences between the various versions are listed in the following sections.

10.5 Dimensions and weights

Figure 2.1 shows the machine layout with the maximum dimensions in **mm [in]**. The actual dimensions of the product, including any options, can be found in the drawing sent to you with the order confirmation.

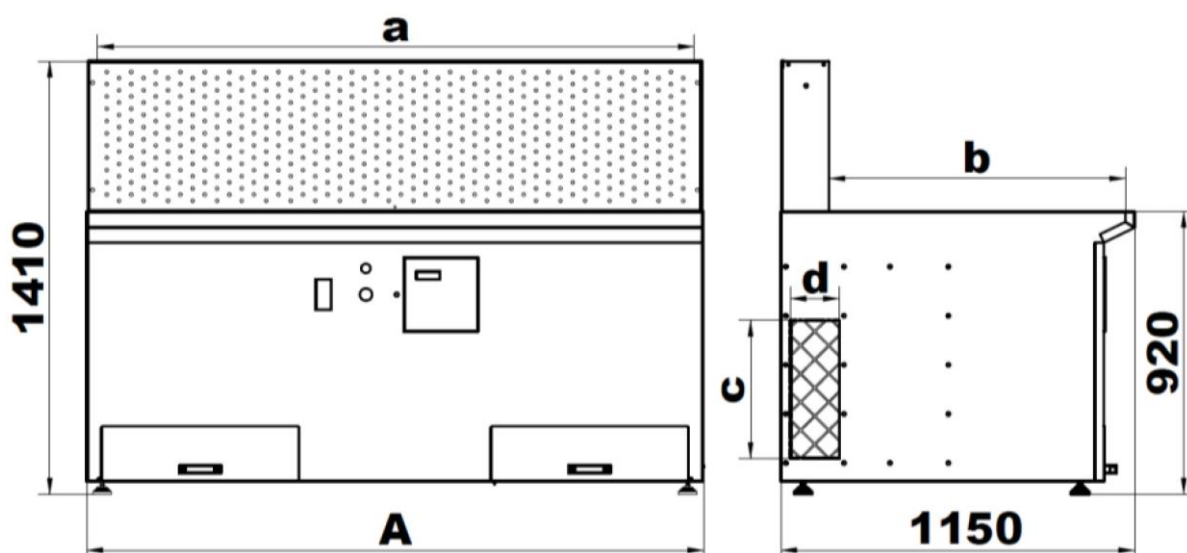


Fig. 20 : Dimensions

Model	A (Ref. Fig. 2.1) mm [in]	A x b (Ref. Fig. 2.1) mm [in]	c x d (see Fig. 2.1) mm [in]
BC 15 PLUS	1680 [66.1]	1620 x 955 [63.8 x 37.6]	450 x 160 [17.7 x 6.3]
BC 20 PLUS	2000 [78.7]	1940 x 955 [75.6 x 37.6]	450 x 160 [17.7 x 6.3]

Table28 : Dimensions

NOTE

If accessories such as a rectangular exhaust duct, silencer or duct with a HEPA filter are fitted, the height 'A' of the product will vary.

NOTE

If the 'box' accessory is fitted, the overall height of the product will vary.

NOTE

The worktop can be fitted with a non-suction extension to increase the usable surface area.

10.6 Spare parts

Item No.	Description	Item No.
1	Belt kit for 95515300, 95515301, 95515311, 95615311	1170738
2	Belt kit for 95520500, 95520501, 95520511, 95620511	1170739
3	Filter cartridge for 95515300, 95515301	1090784
4	ATEX filter cartridge for 95515311, 95615311	1090785
5	Filter cartridge for 95520500, 95520501	1090786
6	ATEX filter cartridge for 95520511, 95620511	1090787

Table29 : Spare parts

10.7 Accessories

Item No.	Description	Item No.
1	Set of wheels	1441526
2	Silencer	1013093
3	Hepa H13 replacement filter for 95515300, 95515301, 95515311, 95615311	1090777
4	HEPA H13 replacement filter for 95520500, 95520501, 95520511, 95620511	1090778
5	Vise mount	1272550
6	Surface protection – PVC strips for 95515300, 95515301, 95515311, 95615311	1061330
7	Surface protection – PVC strips for 95520500, 95520501, 95520511, 95620511	1061331

Table30 : Accessories

11 APPENDICES

11.1 List of Appendices

The Operating and Maintenance Manual for the PNEUMATICALLY CLEANED SUCTION TABLE WITH CARTRIDGES is supplemented by appendices, which are listed separately due to the modifications made.

The following list contains the appendices:

- Appendices 1 and 2: Circuit diagrams;
- Appendix 3: Pneumatic circuit diagrams;
- Appendix 4: Spare parts;
- Declaration of Conformity;

Appendix 1 – BC15 PLUS circuit diagram

Control panel 1.1 – 1.5 kW – Standard IEC 81346-2 – Drawing No. 811255_0 dated 26 July 2022



Control panel 2.2 – 3 kW – Standard IEC 81346-2 – Drawing No. 811256_0 dated 26 July 2022



Pneumatic diagram BC15 PLUS



Table31 : Pneumatic diagram BC15 PLUS

Pneumatic diagram BC20 PLUS

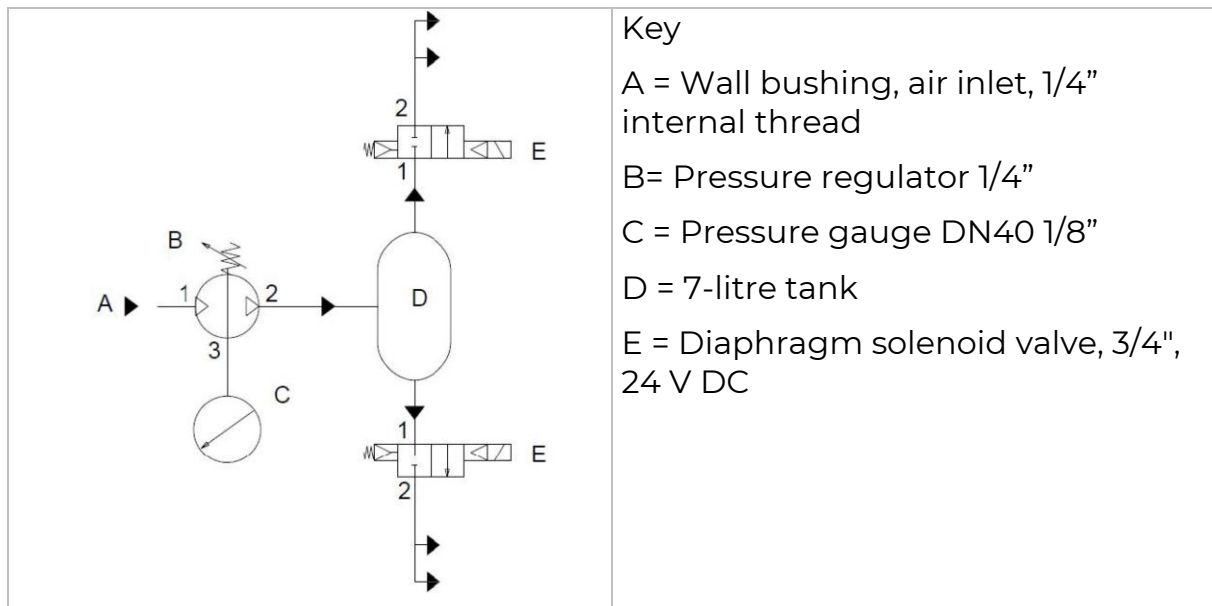


Table32 : BC20 PLUS pneumatic diagram

DICHIARAZIONE DI CONFORMITÀ - DECLARATION OF CONFORMITY -
DÉCLARATION DE CONFORMITÉ - KONFORMITÄTSERKLÄRUNG

MODELLO MACCHINA - Machine Model Modèle De Machine - Maschinen-Modell	<i>Per ns ufficio:</i> <i>Inserire ns codice identificativo del prodotto da gestionale</i>
DESCRIZIONE MACCHINA - Machine Description Description de la Machine - Maschinenbeschreibung	<i>Per ns ufficio:</i> <i>Inserire descrizione riportata in nostra conferma d'ordine</i> <i>nella lingua richiesta</i>
MATRICOLA - Serial Number Numéro De Série - Seriennummer	<i>Per ns ufficio:</i> <i>Inserire numero di matricola che compare in conferma</i> <i>d'ordine.</i>
ANNO DI FABBRICAZIONE Year of Manufacture Année De Fabrication - Baujahr	2025

EFFFE GROUP S.R.L. dichiara che la presente macchina è conforme alle seguenti specifiche tecniche:

EFFFE GROUP S.R.L. declares that this filtering unit complies with the following technical specifications:

EFFFE GROUP S.R.L. déclare que cette unité de filtration est conforme aux spécifications suivantes:

EFFFE GROUP S.R.L. erklärt, dass die Filteranlage den folgenden Regeln entspricht:

DIRETTIVE COMUNITARIE – Community Directives – Directives Communautaires - Gemeinschaftliche
Richtlinie

Direttiva Macchine – Machinery Directive – Directive Machines - Maschinenrichtlinie	2006 -42-CE
Direttiva bassa tensione – Low voltage directive – Directive sur la basse tension - Niederspannungsrichtlinie	2014 -35-UE
Compatibilità elettromagnetica – Electromagnetic compliance – Compatibilité électromagnétique - Elektromagnetische Verträglichkeit	2014 -30-UE
Nuova Direttiva PED – New Pressure Equipment Directive (PED) – Nouvelle directive PED - Neue PED-Richtlinie	Direttiva 2014 -68-UE

NORME ARMONIZZATE – Harmonized Standards – Normes Harmonisées - Harmonisierte Normen

Equipaggiamenti elettrici – Electrical equipment – Équipement électrique – Elektrische Ausrüstung	EN 60204 -1
Sicurezza del macchinario – Safety of Machinery – Sécurité des machines - Sicherheit	UNI EN ISO 12100:2010

ATTENZIONE – ATTENTION – ATTENTION - ACHTUNG

Leggere attentamente le istruzioni di uso e manutenzione allegate

Please read the enclosed operating and maintenance instructions carefully

Veuillez lire attentivement les instructions d'utilisation et d'entretien ci-jointes

Bitte lesen Sie die beiliegende Betriebs- und Wartungsanleitung sorgfältig durch

Calenzano, 10/2025

Tulini Marco

(Persona autorizzata alla costituzione del fascicolo tecnico come previsto
dall'allegato IIA della direttiva macchine n.2006-42)

(Person authorised to compile the technical file as required by Annex IIA of
Machinery Directive No. 2006-42)

(Personne autorisée à constituer le dossier technique conformément à l'annexe
IIA de la directive Machines n° 2006-42)

(Person, die befugt ist, die technischen Unterlagen gemäß Anhang IIA der
Maschinenrichtlinie Nr. 2006-42 zu erstellen)

EFFFE GROUP S.R.L.
Via Capalle, 51/53
50041 CALENZANO (FI)
P. IVA 05290490480

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. +492564 68-135
Fax +492564 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. +492564 68-137
Fax +492564 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

