

Translation of the original instructions



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Data of publication: 2026.02.23

USER MANUAL



KLIMAWENT

Po prostu niezawodnie

Single-station filtration devices

UFO-1000

EN



The user manual applies to the following device models:



Catalogue no.:	Product name
905U29	UFO-1000
905U44	UFO-1000-S

User manual – title: „UFO-1000 single-station filtration devices”

*The structure and format of the instructions consider the principles set out in:
PN-EN 82079-1, PN-EN ISO 20607, PN-EN ISO 7010, MD 2006/42/EC and other harmonised standards.*



KLIMAWENT

Po prostu niezawodnie

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1. INTRODUCTION

1.1. INTRODUCTORY INFORMATION

These operating instructions are intended for the user of **UFO-1000**. The purpose of this manual is to provide the user with instructions on the intended use, assembly, installation, start-up, and use of the device, as well as hazards and possible disruptions in operation, but also disassembly, shutdown and disposal.

INFORMATION



Due to the constant improvement of its products, the manufacturer reserves the right to make design changes aimed at increasing the usability and safety of use.

! CAUTION



The user is obliged to comply with the provisions of this manual and the relevant manuals, i.e. the operating manual of the electric motor.

This manual **DOES NOT** contain the operating instructions for the electric motor.

CAUTION!

PLEASE READ THIS MANUAL BEFORE USING THE DEVICE!

KEEP THE USER MANUAL FOR THE FUTURE!

1.2. STRUCTURE AND INFORMATION RULES OF THE MANUAL

This manual contains **4 types** of articulated messages containing an informational signal combining a **word** and a **symbol** in a graphic form, depending on the level and probability of the risk, i.e.:

INFORMATION



Danger Level: VERY LOW or NONE

Content, memo, and explanation showing the typical state and appearance, typical action, and behaviour. This section contains general information that must be followed by all personnel operating the device.

! CAUTION



Danger level: LOW

Warning content that indicates an elevated level of user attention. The explanation in the text presents a risk that may damage the device but is not destructive, immobilizing or has a minor impact on the user.

! WARNING



Danger level: HIGH

Warning content indicates a high level of user attention. The explanation in the content presents risks that may damage or destroy the equipment or may cause injury to the user.

! DANGER



Threat Level: very high

Warning content indicates a very high level of user attention. The explanation in the content depicts a risk that may cause damage to the device or others in the vicinity, or may cause serious injury or death. Repair work must be carried out immediately once the risk is perceived. All activities leading to an increase in risk are prohibited!

**1.3. NAME AND ADDRESS OF THE MANUFACTURER**

Any requests for information, repair work or questions regarding the technical aspects of this document should be addressed to:

KLIMAWENT S.A.

Chwaszczyńska 194 street

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Phone: +48 58 629 64 80

Fax: +48 58 629 64 19

e-mail: klimawent@klimawent.com.pl



2. MANUFACTURER'S DECLARATION

2.1. GENERAL INFORMATION

The **UFO-1000** and **UFO-1000-S** devices have been designed and made with due diligence, with the participation of the internal quality management system **ISO 9001** and take into account the current state of knowledge and technological level, and above all ensure safety rules during use.

2.2. COMPLIANCE WITH EUROPEAN DIRECTIVES

The manufacturer, **KLIMAWENT S.A.**, hereby declares that the single-station filtration units, models **UFO-1000** and **UFO-1000-S**, comply with the requirements of the following European Directives:

1. **Directive 2006/42/WE (MD)** – of the European Parliament and of the Council of 17 May 2006 on machinery, amending Directive 95/16 / EC (recast) (Journal of Laws UE L157 of 09.06.2006, p. 24),
2. **Regulation of the (Polish) Minister of Economy** of October 21, 2008, on requirements for machines (Journal of Laws No. 199 of 2008, item 1228),
3. **Directive 2014/35/EU (LVD)** – Directive of the European Parliament and of the Council of 26 February 2014 on the harmonization of the laws of the Member States relating to the making available on the market of electrical equipment designed for use within certain voltage limits (Journal of Laws UE L96 of March 29, 2014),
4. **Directive 2009/125/EC (ErP)** – Directive of the European Parliament and of the Council of October 21, 2009, establishing general principles for setting ecodesign requirements for energy-related products (Journal of Laws L285 of October 31, 2009),
5. **Commission Regulation (EU) No 327/2011 of 30 March 2011** implementing Directive 2009/125 / EC of the European Parliament and of the Council with regard to ecodesign requirements for fans powered by an electric motor with a power consumption of 125 W to 500 kW (Journal of Laws L90 of April 6, 2011)

2.3. COMPLIANCE WITH HARMONISED AND NATIONAL STANDARDS

Additionally, the manufacturer declares that the **UFO-1000** and **UFO-1000-S** type devices comply with the following harmonised and national standards:

1. **EN ISO 12100:2010** – Safety of machinery – General principles of design – Risk assessment and risk reduction;
2. **EN ISO 13857:2019** – Safety of machinery – Safety-related parts of control systems – Part 1: General principles for design;
3. **EN 1005-1:2001+A1:2008** – Safety of machinery - Human physical performance - Part 1: Terms and definitions;
4. **EN 1005-2:2003+A1:2008** – Safety of machinery - Human physical performance - Part 2: Manual handling of machinery and component parts of machinery;
5. **EN 60204-1:2018** – Machinery Safety – Electrical Equipment of Machines – Part 1: General Requirements;
6. **EN 60529:1991+A1:2000+A2:2013** – Degrees of protection provided by enclosures (IP Code);
7. **EN IEC 61439-1:2021** – Low-voltage switchgear and controlgear assemblies – Part 1: General rules;
8. **EN 842:1996+A1:2008** – Machinery Safety – Visual Danger Signals – General Requirements, Design and Testing.



2.4. DECLARATION OF CONFORMITY TEMPLATE



DEKLARACJA ZGODNOŚCI WE UE EC&EU DECLARATION OF CONFORMITY

1. **Producent / Manufacturer:** KLIMAWENT S.A. 81-571 Gdynia, ul. Chwaszczyńska 194, Polska
 2. **Opis produktu / Product name:** Urządzenie filtracyjne
Filtering unit

3. Model / Model:	UFO-1000	UFO-1000-S
4. Nr produktu / Product number:	905U29	905U44

5. **Nr seryjny / Serial number:** ~
 6. **Rok produkcji / Year of production:** ~
 7. **Niniejsza deklaracja zgodności wydana zostaje na wyłączną odpowiedzialność producenta.**
This declaration of conformity is issued under the sole responsibility of the manufacturer.

8. **Wymieniony powyżej wyrób spełnia wymagania następujących dyrektyw europejskich:**
The product mentioned above meets the requirements of the following European directives:

MD 2006/42/WE	2006/42/EC
LVD 2014/35/UE	2014/35/EU
ERP 2009/125/WE	2009/125/EC

9. **Odniesienia do norm zharmonizowanych oraz norm krajowych (lub ich fragmentów), które zastosowano, w stosunku do których deklarowana jest zgodność:**
References to the harmonized standards and the national standards (or parts thereof) that have been applied and against which conformity is declared:

PN-EN ISO 12100:2012	EN ISO 12100:2010
PN-EN ISO 13857:2020-03	EN ISO 13857:2019
PN-EN 1005-1+A1:2010	EN 1005-1:2001+A1:2008
PN-EN 1005-2+A1:2010	EN 1005-2:2003+A1:2008
PN-EN 60204-1:2018-12	EN 60204-1:2018
PN-EN 60529:2003+A2:2014-07	EN 60529:1991+A1:2000+A2:2013
PN-EN IEC 61439-1:2021-10	EN IEC 61439-1:2021
PN-EN 842+A1:2010	EN 842:1996+A1:2008

10. **Osoba upoważniona do przechowywania i przygotowania dokumentacji technicznej:** Teodor Świrbutowicz,
A person authorized to store and prepare technical documentation: KLIMAWENT S.A.

11. **Niniejsza deklaracja zgodności jest podstawą do oznakowania wyrobu znakiem:**
This declaration of conformity is the basis for marking the product with the mark:



Deklaracja zgodności wystawiona została w oparciu o przeprowadzony proces oceny zgodności. Deklaracja ta odnosi się wyłącznie do maszyny w stanie, w jakim została wprowadzona do obrotu i nie obejmuje części składowych dodanych przez użytkownika końcowego lub przeprowadzonych przez niego późniejszych działań.

The declaration of conformity was issued based on the conformity assessment process. This declaration relates only to the machine in the state in which it was placed on the market and does not cover components added by the end user or subsequent actions performed by the end user.



W imieniu producenta podpisali / *Signed on behalf of the manufacturer by:*

Michał Kulczyński

 CZŁONEK ZARZĄDU /
 MEMBER OF THE BOARD



Joanna Koniarek

 PREZES ZARZĄDU /
 CEO

Data wydania dokumentu: 2025-02-26
Date of document release:

3. DEVICE DESCRIPTION

3.1. APPLICATION

Single-station filtration devices **UFO-1000** are designed for air purification from contaminants generated during welding processes, removing dry dust (without moisture, sticky, corrosive, or explosive contaminants), grinding non-sparking materials, and dusty processes in the chemical, pharmaceutical, food, plastics, and other industries. The device is suitable for smoke and dust filtration. It features a pleated cartridge filter with an oleo-hydrophobic coating.

The device is designed to work with **ERGO LUX L/R** extraction arms with a nominal diameter of 160 mm and lengths of **2, 3 or 4 m** – for a list of compatible arms - see point 8.6 – **ADDITIONAL EQUIPMENT** on page 56.

The device is intended for indoor use or protected from weather conditions – see section 4.1 – **MANUFACTURER'S DISCLAIMER** on page 21.

3.2. STRUCTURE

3.2.1. DESCRIPTION

Single-station filtration devices **UFO-1000** are made in two versions: **mobile** and **stationary** – see Picture 1 on page 10 and Picture 3 on page 12.

Filtering devices **UFO-1000** have a built-in fan with a dampened expansion chamber, a body with a chute, a dust container, a cartridge filter and a mesh filter, as well as an automatic control unit for the device's operation.

The devices are equipped with a lockable structure

and handles for horizontal transport in the mobile version – **UFO-1000** – see Picture 1 on page 10, or legs that can be attached to the ground in the stationary version – **UFO- 1000- S** – see Picture 3 on page 12.

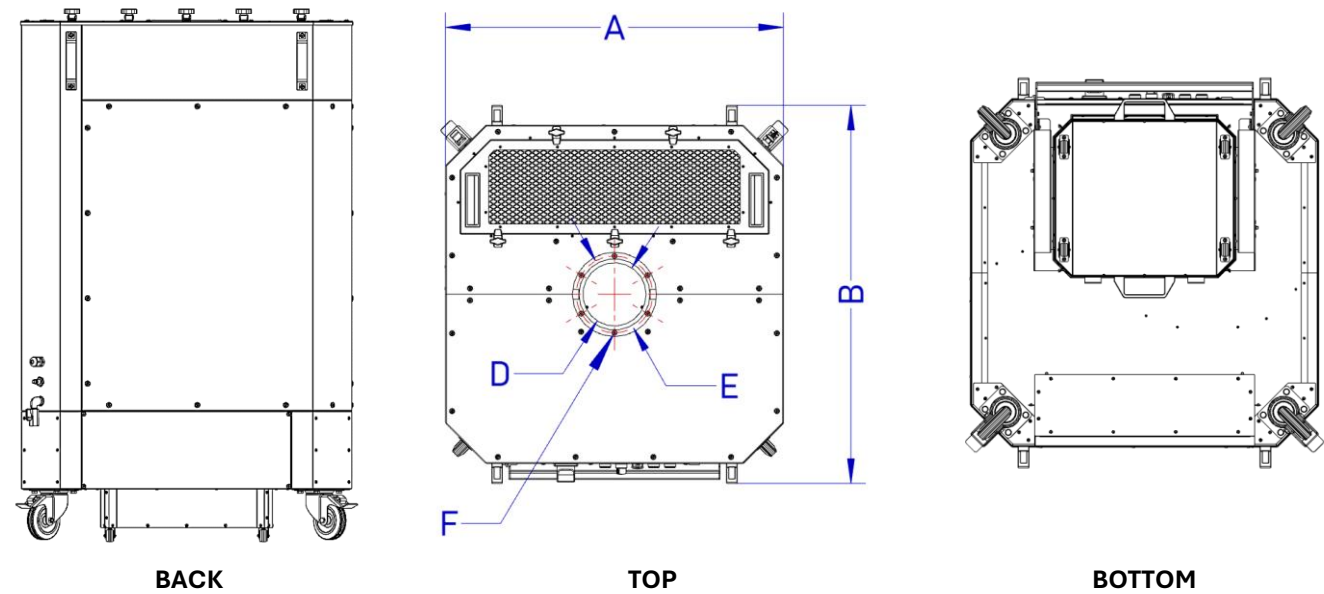
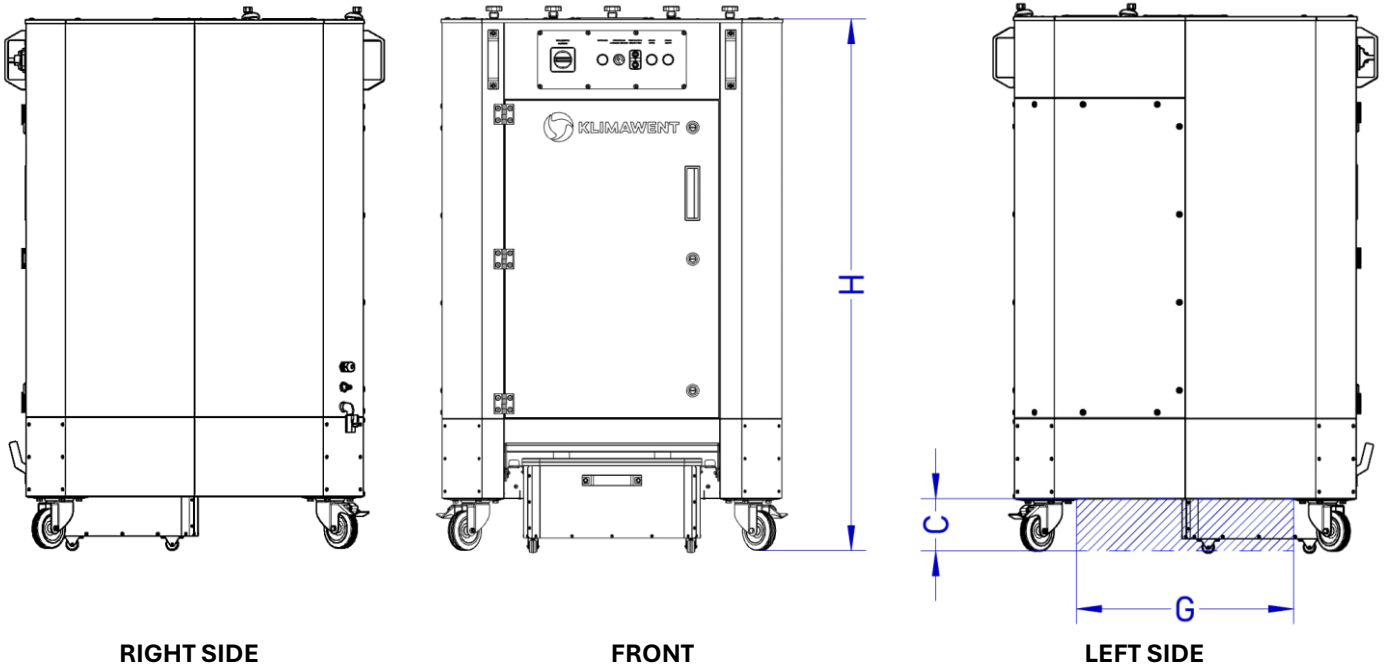
Under the devices, there are dust containers with a capacity of 30 dm³ for the **UFO-1000** type device or 70 dm³ for **UFO-1000-S**.

The top plate of the devices is fitted with a suction port socket adapted to the installation of **ERGO LUX-L/R** extraction arms with lengths of **2, 3 or 4 m**. There is also a free recirculation air outlet in the upper part.

The devices are equipped with a **control panel** located on the front. Below the panel is an inspection door for replacing and inspecting the cartridge and mesh filters.

The devices feature a **pleated cartridge filter** equipped with an automatic compressed air pulse regeneration system. During operation, dust is retained on the filter's outer surface, where it is periodically and automatically removed using pulses of compressed air, allowing the device to operate without interruption.

Additionally, a mechanical mesh filter is located upstream of the cartridge (main) filter. Its primary function is to retain larger particles that could destroy or significantly reduce filtration efficiency. This filter can also protect the main filter from damage from ingested hot or glowing particles.

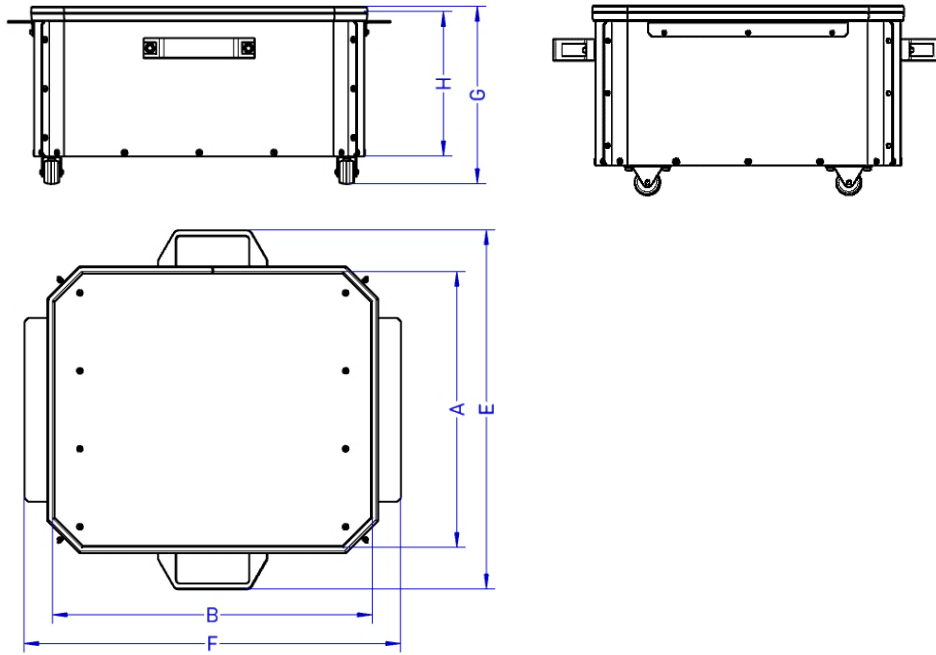


Picture 1 UFO-1000 – mobile version

D – mounting socket for the extraction arm type **ERGO LUX-L/R**

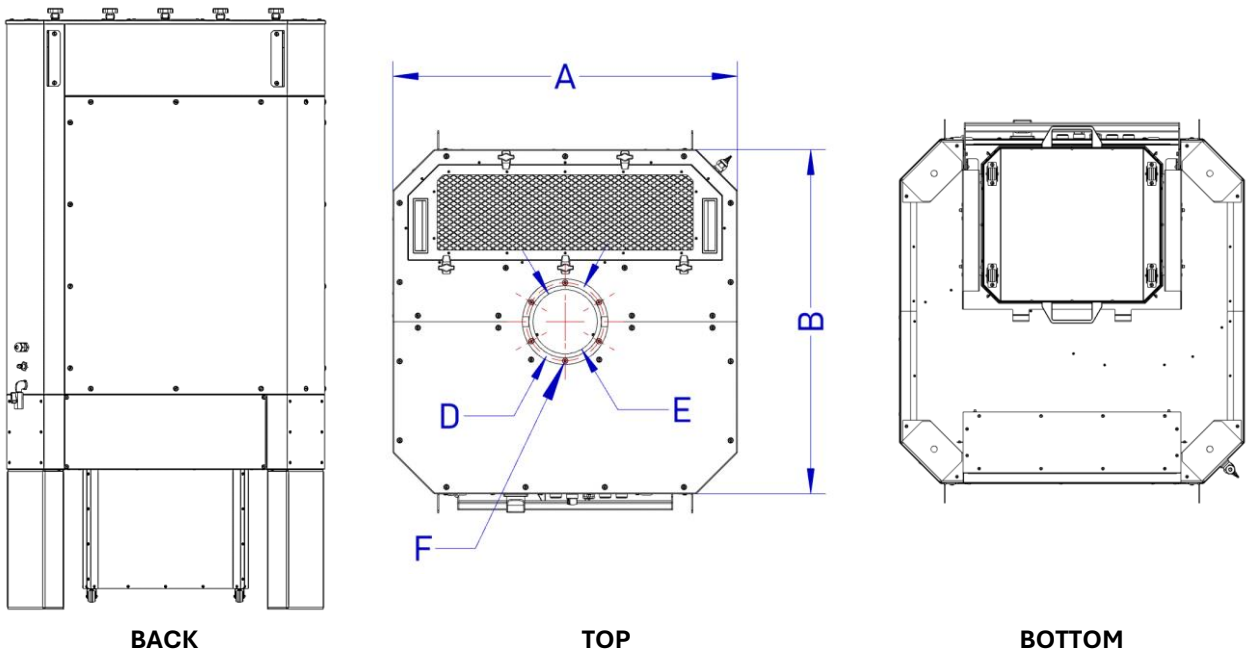
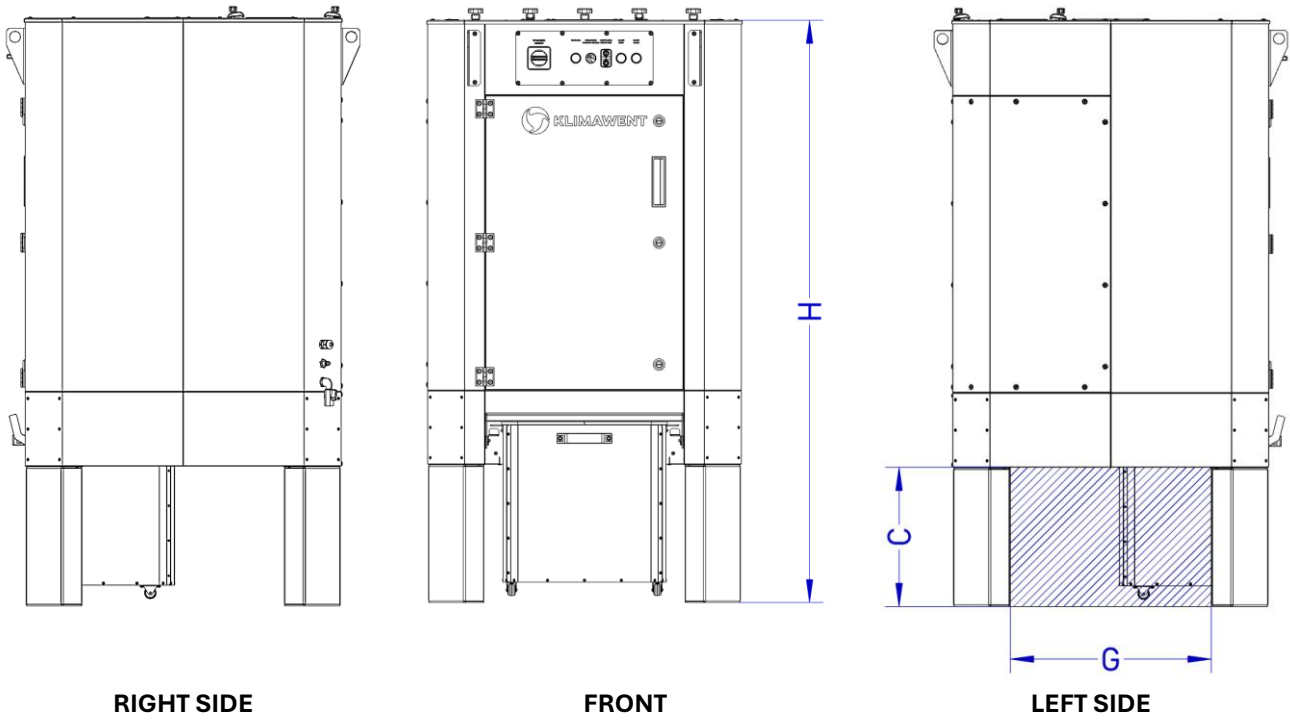
CG – support point during transport using trolleys or forklifts

A [mm]	B [mm]	H [mm]	D [mm]	E [mm]	F [mm]	C [mm]	G [mm]
855	965	1335	160	194	M6	130	540



Picture 2 Dust container 30 dm³

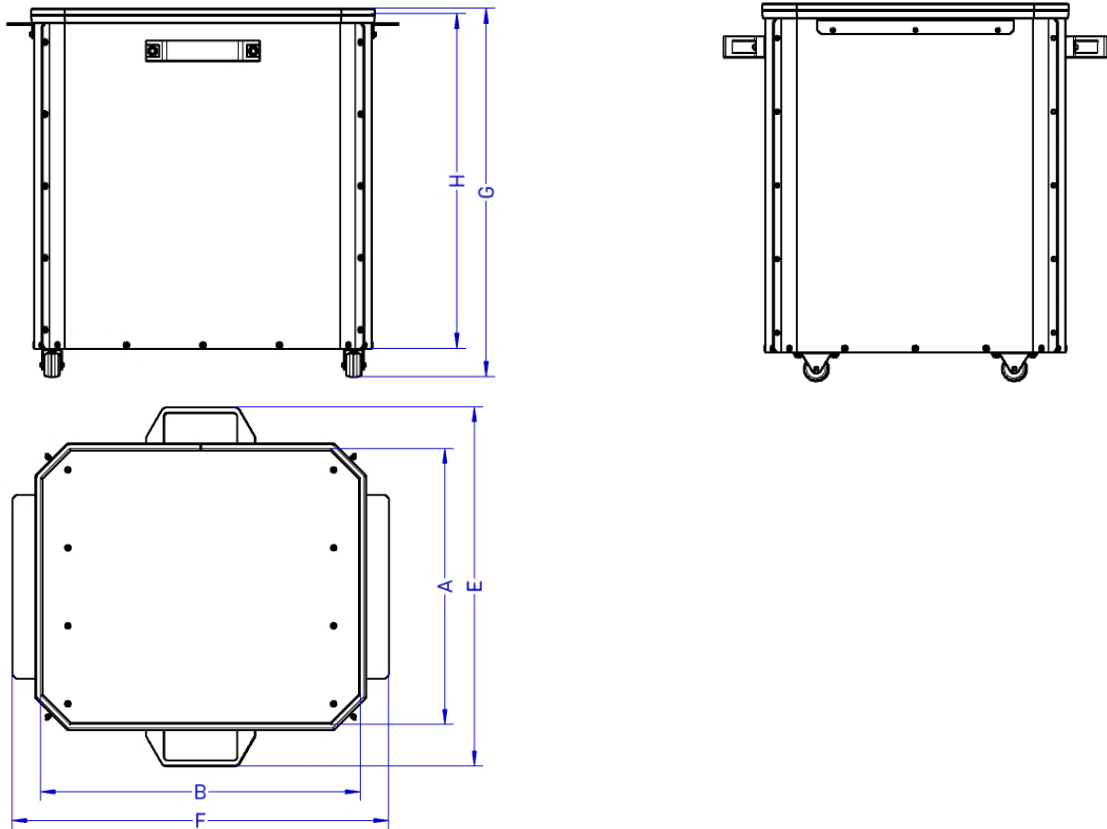
A [mm]	B [mm]	E [mm]	F [mm]	H [mm]	G [mm]
375	435	490	515	190	240



Picture 3 UFO-1000-S – stationary version

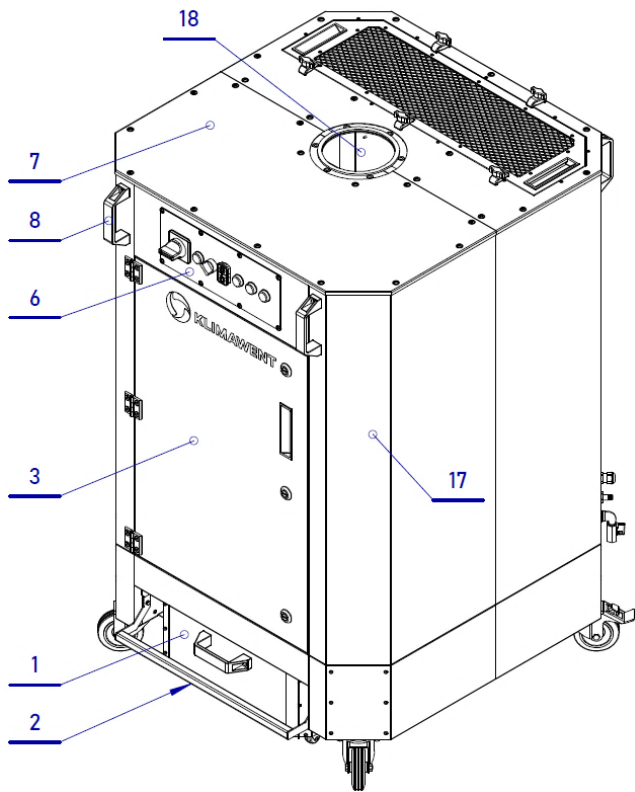
D – mounting socket for the extraction arm type **ERGO LUX-L/R**
CG – support point during transport using trolleys or forklifts

A [mm]	B [mm]	H [mm]	D [mm]	E [mm]	F [mm]	C [mm]	G [mm]
855	855	1580	160	194	M6	375	540

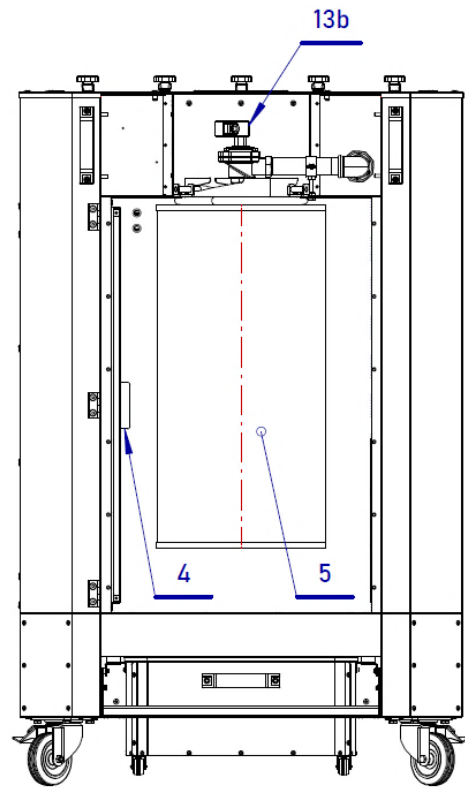


Picture 4 Dust container 70 dm³

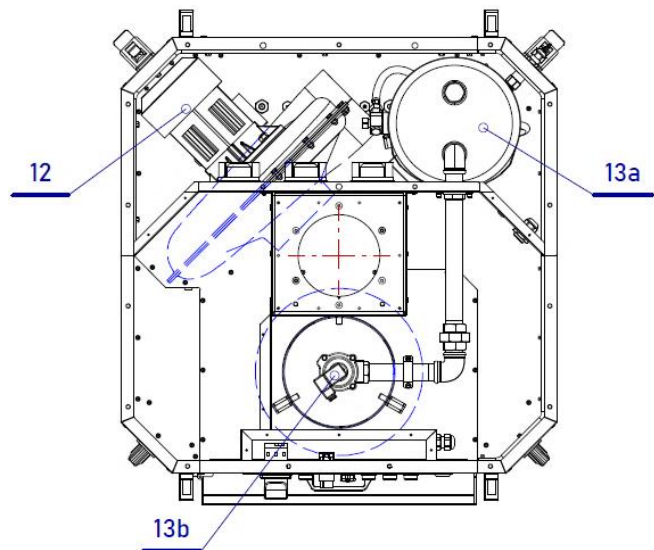
A [mm]	B [mm]	E [mm]	F [mm]	H [mm]	G [mm]
375	435	490	515	440	485



Picture 5

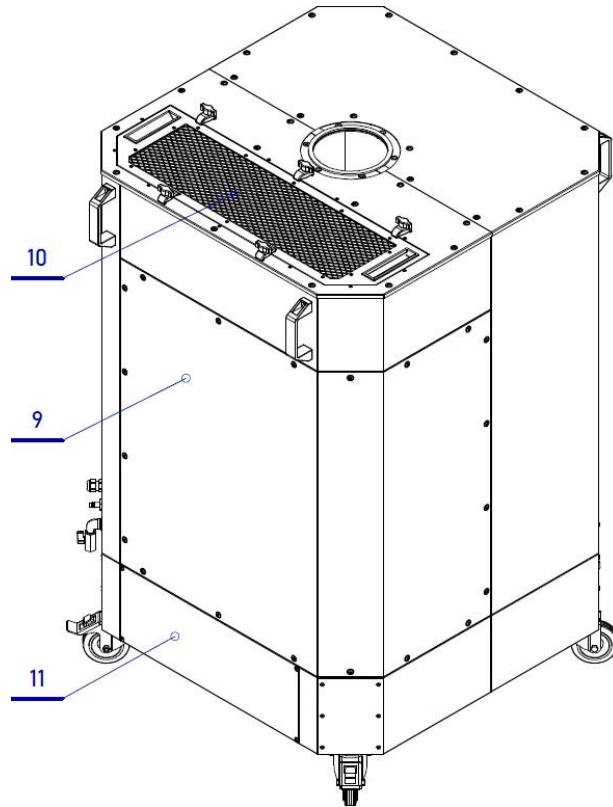


Picture 6

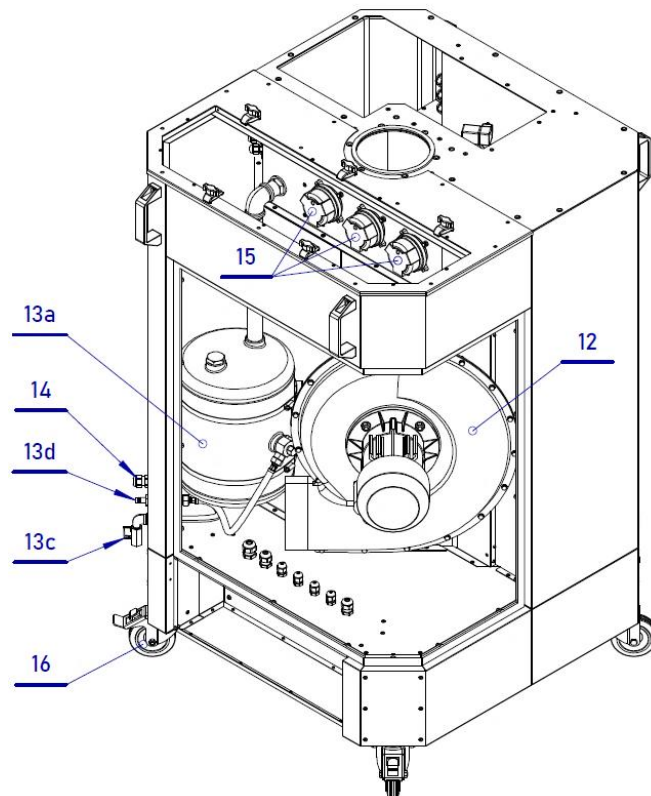


Picture 7

1 – Dust container, **2** – Container chute pressure mechanism, **3** – Front door,
4 – Spark catcher, **5** – Cartridge filter, **6** – Control panel, **7** – Removable top plates,
8 – Handles, **12** – Fan, **13a** – Pressure tank, **13b** – Solenoid valve,
17 – Unit housing, **18** – ERGO LUX L/R arm mounting point



Picture 8



Picture 9

9 – Removable back wall, **10** – Carbon fibre outlet cover and cover clamps,
11 – Electrical assembly, **12** – Fan, **13a** – Compressed air tank, **13c** – Drain valve,
13d – Compressed air connection, **14** – Power cable outlet,
15 – Differential pressure switches, **16** – Wheels or legs



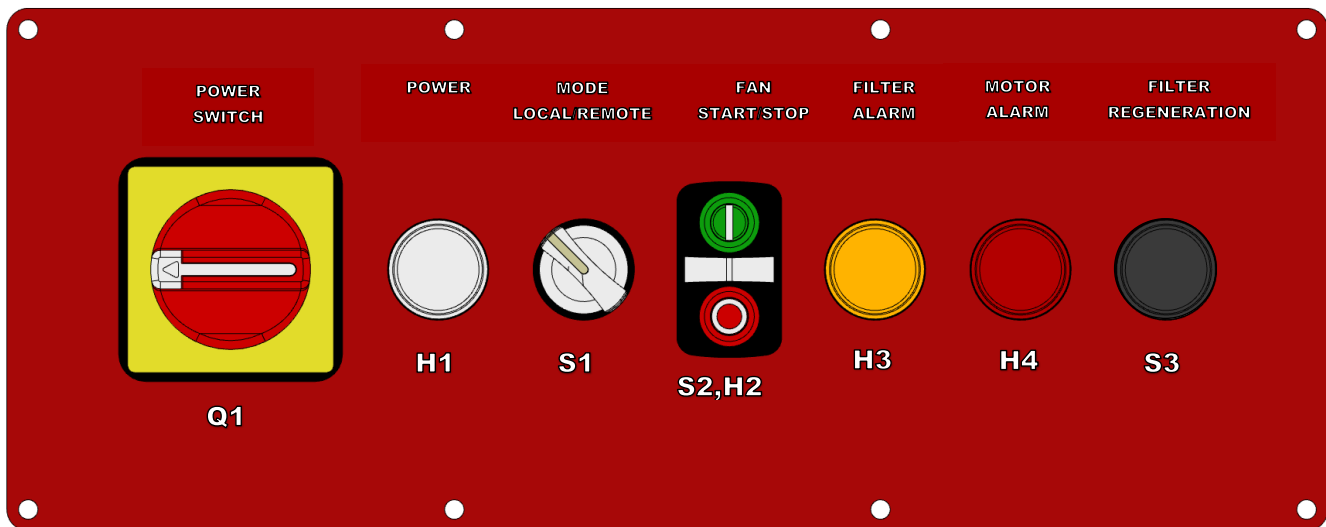
3.2.2. CONTROL UNIT (ELECTRICAL SWITCHBOARD)

The control unit consists of two basic components (see Picture 10 below):

- A. **Control panel** mounted on the cover of the electrical switchboard – see point 3.2.2.1 below,
- B. **Electrical apparatus** built inside the switchgear serves as a power supply to the device and the controller – see point 13.1.1 – ELECTRICAL SWITCHGEARQUIPMENT on page 65.

3.2.2.1. CONTROL PANEL

The control panel consists of traffic lights and buttons, such as signal lamps and illuminated buttons. Their function is to switch on the power supply, start the fan, signal the operating states of the device and alarm in the event of a failure. The switchboard and the apparatus are described in pt. 7.1.1 – SWITCHGEAR AND CONTROLLER on page 43.



Picture 10 Appearance of the control panel

H1 – Lamp signalling the appearance of power in the system; **S1** – Mode switch;
S2 – Fan start and stop button; **S3** – Button to manually force additional filter regeneration; **H2** – White light indicating fan operation; **H3** – Orange light indicating the cartridge filter is at the limit of contamination;
H4 – Red light indicating engine alarm; **Q1** – Power switch

! CAUTION



The device can be controlled from the panel on the electrical switchboard (**LOCAL**) or from another (**REMOTE**) by connecting to terminals **17** and **18** in the switchgear of the **NO** relay signal.

3.3. TECHNICAL DATA

Table 1: Technical data

Catalogue no. Type		905U20 UFO-1000	905U44 UFO-1000-S
Maximum Flow		1500 m ³ /h	
Minimum Flow (alarm) ¹		1000 m ³ /h ²	
Maximum vacuum		1600 Pa	
Minimum Vacuum (Alarm)		800 Pa	
Net weight		137 kg	153 kg
Sound Pressure Level ^{3,4}		Front 70,5 / Back 73,5 dB(A) ^{3,4}	
Device operating temperature		from -20°C to +40°C	
Maximum Dust Load		3 g/m ³	
Electricity supply			
Electric motor power		0,75 kW	
Supply voltage and frequency		1×230 VAC \ 50 Hz	
Synchronous speed		3000 rpm	
Compressed air supply			
Compressed air pressure		from 0,6 to 0,8 MPa ⁵	
Quality Conditions ⁶		Oil-Solids-Water: 6:4:4	
Equipment			
Cartridge filters	Filter designation	POH186632T	
	Catalogue No.	952F134	
	Filter material and surface	Oleo-hydrophobic nonwoven fabric \ 18 m ² / 1 filter	
	Type of contamination	Smoke / Fine dust	
	Dimensions [diameter × height]	Ø320×660 mm	
Compressed air tank	Capacity	15 dm ³	
	Working temperature and pressure	from -20°C to +80°C / 0,5 – 8 bar	
Pulse valve	Control type	Electric; opened by an electromagnetic coil	
	Diameter and type of flow	Ø1", angled 90°	
	Control voltage	230V/50-60 Hz (±10%)	
	Working temperature and pressure	from -20°C to +80°C / max 0,8 MPa	
Dust container	Capacity	30 dm ³	70 dm ³

¹ **CAUTION:** The minimum efficiency value required to obtain the minimum velocity at the edges of the suction spectrum in accordance with EN ISO 21940-1.

² **CAUTION:** The minimum efficiency value is given for measurements during air flow through 1 ERGO LUX-L-4/R extraction arm.

³ **CAUTION:** Sound pressure measurement taken at a distance of 1 m from the device at maximum output.

⁴ **CAUTION:** The device is a source of impulsive noise during the operation of the automatic cartridge filter cleaning system.

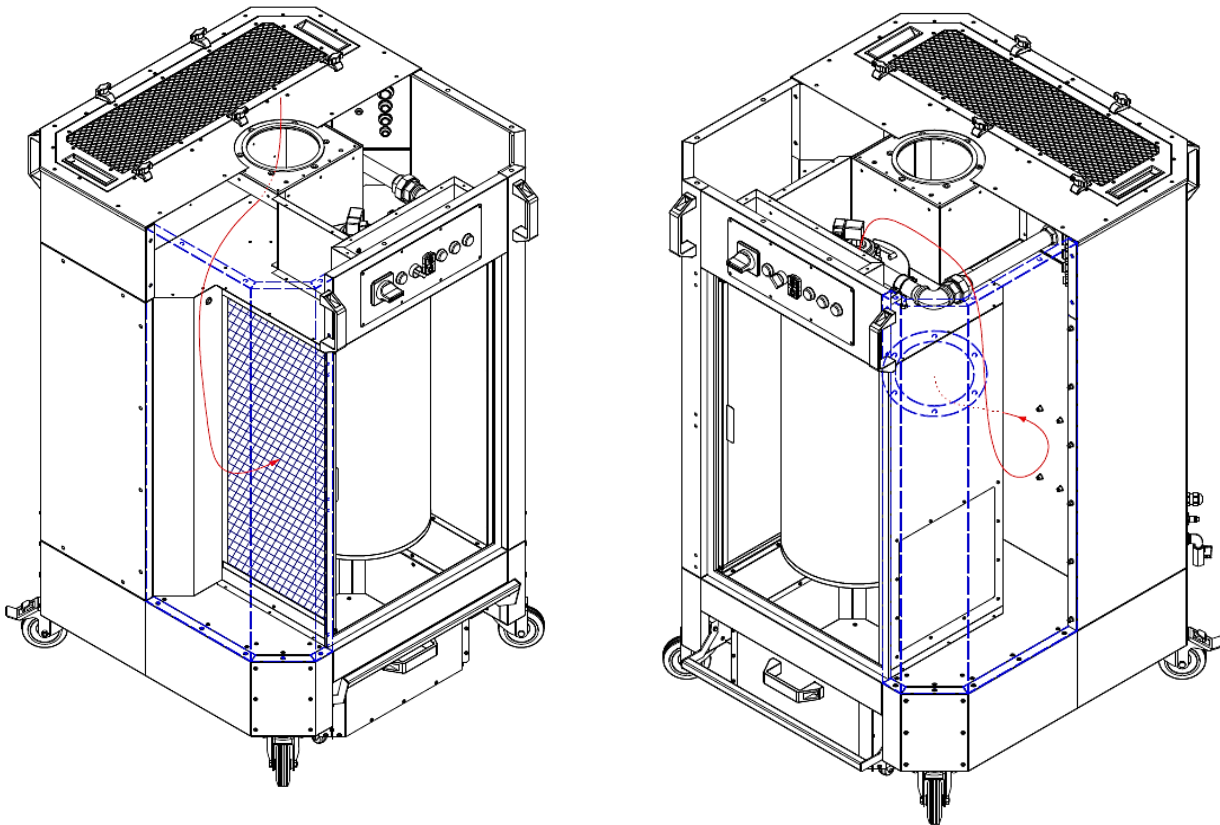
⁵ The compressed air tank is not subject to UDT operational supervision ($V \times P < 300 \text{ bar} \times \text{dm}^3$)

⁶ **ISO 8573-1:2010 class 6:4:4** – See point. 6.3.4 – COMPRESSED AIR CONNECTION on page 38.

3.4. PRINCIPLE OF OPERATION

The **UFO-1000** and **UFO-1000-S** devices are designed to remove dust from compressed air using a cartridge filter with oleo-hydrophobic nonwoven fabric. The **UFO-1000** devices feature one cartridge filter for fine particles and one mesh filter for capturing larger particles.

Air drawn in through the inlet connector, to which an **ERGO LUX** type extraction arm is attached, enters the filtration chamber. First, the air passes through a mechanical mesh filter, which is designed to separate larger particles that may carry heated or glowing embers. Subsequently, the air reaches the cartridge (main) filter, where fine particulate matter is deposited on its surface. The purified air then flows through the internal chambers of the device to the fan – see Picture 11 – and is finally discharged into the room through the upper perforated cover. Air purified in this manner has the characteristics of recirculated air, which can safely be returned to the room occupied by personnel.



Picture 11 Air-flow path

Some of the pollutants fall into the tank, and the rest adhere to the external surface of the filters as a result of suction (negative pressure) by the flowing air. Adhering contaminants increase flow resistance during operation of the device, so to counteract this phenomenon and reduce flow resistance, during operation of the device, **compressed air pulses** are generated into the filter from the "clean" side, which cleans it of dust.

The removed (shaken) dust falls and collects in the dust container at the bottom of the device. The dust in the container must be regularly removed to prevent dust from being drawn back out of the container.

The filter regeneration process occurs automatically during operation, allowing the device to operate continuously until a sufficient amount of dust has accumulated. **Additionally, manual pulse generation is possible at any time via a button on the control panel.**

In cases of heavy dust loads or after an extended period of operation, an increase in flow resistance and a decrease in device efficiency may occur, regardless of the filter regeneration performed by compressed air pulses. **This is a normal phenomenon.** In such instances, the rising negative pressure within the device chamber will trigger an alarm in the form of the **FILTER ALARM** warning light – see point 7.1.7 – ALARM SIGNALS on page 45, which necessitates an inspection of the filters within the unit.

Upon detection of the **FILTER ALARM**, the filter must be removed from the device and cleaned using equipment designated for this purpose. If reduced device performance persists **regardless of the operation of the cartridge filter** regeneration system, and frequent **FILTER ALARM** notifications continue to occur, the cartridge filter must be replaced with a new one due to its wear.

! CAUTION



The design and principle of operation of the device allow for continuous operation but require the operator to systematically check the amount of dust accumulated, the condition of the cartridge filters, and, above all, the systematic emptying of the accumulated dust from the container.



To ensure an effective filtration process, it is required to ensure a stable connection of compressed air with the filter cleaning system is required, and the conditions and minimum parameters of the compressed air are presented in the point. 6.3.4– COMPRESSED AIR CONNECTION –on page 36.



When the **FILTER ALARM** alarm occurs, remove the cartridge filter from the device and clean it. If the filter becomes worn or permanently soiled, replace it with a new one.



Whenever **servicing the cartridge filter**, check the cleanliness of the **mesh filter** located on the left side of the chamber. Remove it from the drawer and clean it with **compressed air**, or wash it with water and dry thoroughly. Do not use **detergents** or other chemicals that may damage the cartridge filter or become a **source of ignition** during operation.

! WARNING

Possibility of damaging the device, hurting or causing serious injury!



MOISTURE or **OIL** in the airflow **CAN DAMAGE** the filters! Before installing a cleaned pre-filter (mesh), especially one washed with water, dry it thoroughly to prevent any remaining moisture from penetrating the cartridge filter!



4. SAFETY OF USE

4.1. MANUFACTURER'S DISCLAIMER

! WARNING



KLIMAWENT S.A. has conducted a risk analysis only for the **UFO-1000** type device, but it does not take into account the impact of additional risk resulting from use and application at the place of installation in a manner not foreseen by the manufacturer.



Unauthorised modifications to the device and the installation of additional elements that are not part of the device or additional equipment and may affect the safety of use of the device are **FORBIDDEN!**

4.2. SAFETY RULES AND APPLICATION LIMITATIONS

! UWAGA



READ these instructions before putting the device into operation! Keep for future reference in a place accessible to all users.



PROTECT the device against mechanical damage.



CHROŃ przed uszkodzeniem lub zatarciem powodującym nieczytelność lub oderwaniem wszystkie oznaczenia, opisy, tabliczkę znamionową i w szczególności ostrzeżenia.



The device is intended for **PROFESSIONAL USE**. Before starting work, familiarise yourself with the procedures and principles of operating the device. Service may only be performed by **TRAINED** and **QUALIFIED** personnel.

! WARNING

Possibility of damaging the device, hurting or causing serious injury!



The manufacturer is not responsible for personal injuries resulting from **IMPROPER USE**.

During all operations carried out on the equipment (assembly, maintenance, cleaning, etc.), operators must be equipped with appropriate personal protective equipment (PPE) to prevent or minimise injuries which cannot be prevented by other means.



Before assembling the device, check the load-bearing capacity of the structural elements to which it will be attached. **IMPROPER, CARELESS** or **UNSTABLE MOUNTING** of the device may damage it and also pose a real **THREAT** to people in the surrounding area.



Once the unit is positioned in the work area, **LOCK** the wheels (for the mobile version) to prevent the unit from moving out of position or rolling off an uneven surface. **LOCK** the wheels after each position change.



DO NOT start up the device until you have checked the continuity and connection of the **PE** conductor.



Unauthorised modifications to the device and installation of additional elements that are not part of the device or additional equipment are **FORBIDDEN!**

**! WARNING****Possibility of damaging the device, hurting or causing serious injury!**

The temperature of filtered air **CANNOT** exceed **+60°C**.



The ambient temperature during operation **MUST** be between **-20°C and +40°C**; otherwise, at higher temperatures the electric motor of the fan will be exposed to **INSUFFICIENT COOLING**, which may consequently cause its damage.



Ambient relative humidity **MUST NOT** exceed **95%** non-condensing. Excessive moisture in the air can damage the air filter and adversely affect the electric motor.



The atmospheric pressure **MUST** be between **800 hPa** and **1100 hPa**.



The dust limit of the filtered air **MUST NOT** exceed **3 g/m³**.



The device **CAN NOT** be used for the filtration of moist or sticky dust adhering to the surface of the filters, significantly reducing the filtration efficiency.



The device **MUST** be permanently connected to the compressed air network to ensure the uninterrupted operation of the automatic filter cleaning system. Compressed air **MUST** be prepared by an appropriate filtering and reducing unit with a pressure ranging from **0.6 to 0,8 MPa** and meeting the purity conditions specified in point. 6.3.4 – COMPRESSED AIR CONNECTION on page 36.



The device **CAN** operate in continuous mode provided it is permanently connected to the compressed air system – see point. 6.3.4 – COMPRESSED AIR CONNECTION on page 36.



The device **MUST NOT** work in an environment that may cause an accelerated rate of corrosion.



DO NOT BLOCK or **OBSTRUCT** the air outlet of the device — do not place or set any objects on the perforated top cover that may partially or completely cover the outlet.

Doing so will reduce or completely block the airflow through the device.

! DANGER**Possible destruction of the device, property damage, injury or serious bodily harm.**

After each change of position of the **mobile device**, the user **MUST** lock the wheels to prevent the device from rolling away on uneven surfaces.



It is **FORBIDDEN** to position the mobile device on a slope **greater than 3%**! Failure to meet this requirement **may result in the device tipping over** when manoeuvring the extraction arm installed on the device. The device is stable when used with the **2, 3, or 4m ERGO LUX-L/R arm**, **provided the above requirement is met.**

! DANGER**Possibility of serious injury or death due to electric shock!**

The device **MUST NOT** be started before ensuring that the continuity and connection of the **PE conductor** have been checked.

! DANGER**Possibility of damage to the device, fire or explosion!**

PROHIBITED: The use of this device for the transport of air containing **STICKY** or **CORROSIVE** contaminants is **STRICTLY FORBIDDEN**, as these substances may adversely affect the unit.



It is **PROHIBITED** to use devices to purify the air of **CARCINOGENIC**, **RADIOACTIVE DUST** or dust contaminated with **PATHOGENS** and other hazardous substances posing a high risk to human health and life.



It is **FORBIDDEN** to use the device to transport a mixture of air with **FLAMMABLE SUBSTANCES** in the form of gases, vapours, mists or dusts that create an **EXPLOSIVE ATMOSPHERE** with air!

4.3. REQUIRED PERSONAL PROTECTION**RECOMMENDED PERSONAL PROTECTION**

Dust mask required

This warning indicates that personnel must wear protective equipment.

Protective equipment must always be worn during operation and maintenance.



Disconnect the device from the power supply.

This warning indicates the requirement to disconnect the device from the power supply when performing maintenance, troubleshooting, or similar activities that require opening covers and accessing hazardous components, particularly the fan impeller.

4.4. WARNINGS**RECOMMENDED MARKING ON OR NEAR THE DEVICE**

WARNING: Dust-related hazards!

The device itself is not a source of dust emissions and has a sealed housing. However, due to its intended use as an air purifier, dust from the filtration process accumulates inside, on the filter surfaces, in the chute, and in the dust container. Each time the device is opened or the dust container is emptied, the user comes into contact with potentially harmful process dust.



4.5. RESIDUAL RISK INFORMATION

KLIMAWENT S.A. has conducted a **Risk Assessment** in accordance with **EN ISO 12100**. This assessment identifies the remaining **residual risk** for the above equipment (machine) and is illustrated in this chapter. The table below presents information on **residual risk** and the principles of conduct during use at each phase of the equipment's life.

WARNING: THE DEVICE IS SAFE PROVIDED THAT THE PROVISIONS SET FORTH IN THE TABLE BELOW ARE OBSERVED.

Table 2: Safety rules and information on residual risks

THREATS AND SAFETY RULE			
No.	Phase	Threats	Procedure
A.	Unpacking	Impact, abrasion, overturning.	Use personal protective equipment to protect against accidental abrasions, cuts and injuries, in particular anti-cut gloves, protective clothing and work shoes. Pay attention to protruding parts when walking and working next to the device.
B.	Transporting and lifting loads	Impact, abrasion, tipping of the load, and sliding of the load	When moving the device, handle it using the handles located in the corners to prevent uncontrolled sliding or movement, which could result in running over, hitting, or crushing. Always secure the device when moving it! Block the wheels after each position change.
C.	Storage	Impact, abrasion, fall	Use personal protective equipment to protect against accidental abrasions, cuts, or injuries from protruding elements. Follow the rules described in point 5.4 – STORAGE, page 32 Uwaga! Nie zdefiniowano zaktadki. , to protect the device structure against damage, leakage, crushing or destruction.
D.	Installing	Impact, fall	The user must prepare a suitable surface adapted to the size and weight of the device, and the surface must be level and hard to enable free movement and a stable position when parked, and above all, to protect against spontaneous sliding or rolling away from the parking place or tipping over – see point 6.3 – INSTALLING, page 35 and 6.1 – WORK AREA AND COMMUNICATION SPACE on page 33.
E.		Electric shock, concussion	It is necessary to ensure that the device is correctly connected to the socket with the PE protective conductor, and to check whether the socket has been grounded to the main grounding busbar – see point 6.4.2 on page 39.
F.		Injection, burst, high air pressure	The device must be permanently connected to a compressed air network that provides stable pressure, allowing automatic filter cleaning. The condition, pressure, and quality of the compressed air must be continuously monitored – see point 6.3.4 – COMPRESSED AIR CONNECTION on page 36. The design and installation of the device's connection to this network must be performed by qualified personnel, in accordance with the installation guidelines for this type of installation. Regularly check the tightness of the pneumatic components – see section 8.2 – MAINTENANCE SCHEDULE on page 49. Any air leaks are unacceptable. They must be corrected immediately, and if a component becomes damaged and prevents repair, disconnect the device from the compressed air system, drain the compressed air tank, and replace the faulty component.
G.	Start-up / Starting / Working	Discomfort, stress caused by noise	Do not place the device near corners, walls, or enclosed metal structures due to the possibility of vibration and resonance. The device generates impulsive noise generated by the automatic compressed air filter cleaning system. Provide appropriate warnings regarding the impulsive noise generated by the device – see point 4.4 – WARNINGS on page 23.
H.		Noise, discomfort, fatigue	The user or employer must comply with regulations regarding protection against daily exposure of operators to noise generated at work (required by applicable European and national standards) and require the use of personal



THREATS AND SAFETY RULE			
No.	Phase	Threats	Procedure
			protective equipment (earphones, earplugs, etc.) depending on the general sound pressure level in individual workplaces and the daily personal exposure level of employees – see point 4.3 – REQUIRED PERSONAL PROTECTIO on page 23 and 3.3 – TECHNIC on page 17. Place appropriate warnings indicating the impulse noise generated by the equipment – see point 4.4 – WARNINGS on page 23.
I.		Electric shock/burns caused by the motor	Make sure that the current drawn by the fan does not exceed the value stated on the motor nameplate.
J.			Avoid consecutive engine starts that lead to constant overloads of the starting system that overheat electrical components. Allow the electric motor to cool down before restarting.
K.		Burns	Do not touch the engine during and after long-term operation. Allow the motor casing and adjacent surfaces to cool down.
L.		Excessive vibration	Provide scheduled maintenance to prevent technical failures that may occur over time as a result of excessive vibration. – see 8.2 – MAINTENANCE SCHEDULE on page 49.
M.			Excessive vibrations should be avoided as they can cause increased noise levels, seizure of bearings, deformation or cracking of the rotor structure, loosening of screws and nuts of important connections, and ultimately lead to the destruction of rotating components and create a situation that poses a risk to the safety of operators and people in the vicinity.
N.			It is recommended to monitor fan vibrations using a vibration sensor or carry out an inspection at most every 4000 hours of work and vibration measurement to avoid exceeding V_{rms} = 11,8 mm/s – see point 8.4 – MEASURING VIBRATIONS OF THE FAN on page 54.
O.		Poisoning/suffocation	Both the end user and the installer must take into account the risks of pumping air mixtures other than those permitted in this manual. Indicate with appropriate signs all types of dangers related to the situations resulting from non-compliance with the provisions concerning the permitted use of the device.
P.		Slip, fall	Keep the minimum gaps of the device from walls or partitions during installation; otherwise, it may cause hazards and inconvenience in confined spaces during operation or maintenance – see point 6.3 – INSTALLING, page 35.
Q.			Properly light the area surrounding the machine.
R.		Hit, squeeze, crush	Always lock the wheels with brakes after changing the position of the device to prevent the device from rolling away from an uneven surface, which may result in damage to other devices, hitting people, injury, crushing and resulting in serious injury.
S.	Maintenance / Cleaning / Troubleshooting / Disassembly	Tripping, falling, slipping	Maintain the minimum distances between the device and walls or partitions during installation, otherwise it may cause hazards and inconveniences in confined spaces during operation or maintenance – see point 6.1 – WORK AREA AND COMMUNICATION SPACE on page 33.
T.			Properly light the area surrounding the machine.
U.			Operators must be equipped with appropriate personal protective equipment to prevent slipping: footwear and protective clothing.



THREATS AND SAFETY RULE

No.	Phase	Threats	Procedure
V.			It is necessary to ensure that the power socket to which the device is connected has a grounding connection with a PE wire – see point 6.4.2 – PE CONDUCTOR CHECK IN THE POWER SUPPLY SYSTEM on page 39.
W.		Injection, burst, high air pressure	The device must have a permanent connection to the compressed air network, ensuring stable pressure to allow automatic filter cleaning – see connection conditions in point 6.3.4 – COMPRESSED AIR CONNECTION on page 36. Regularly check the tightness of pneumatic components. Air leaks are unacceptable. They should be corrected immediately. If a component is damaged beyond repair, disconnect the device from the compressed air system, drain the compressed air tanks, and replace the defective component.
X.			Before performing any maintenance, turn off and disconnect the power to the device. Wait until all mechanisms have come to a complete stop. The fan will then freewheel.
Y.		Cutting / Entanglement / Collision / Electric Shock / Burns	During maintenance on the impeller or the interior of the fan, even if the power supply has been disconnected, the impeller may rotate due to natural or induced air currents flowing through the unit. This can result in a serious risk of cuts, abrasions, and/or entanglement. Therefore, mechanical locking of the moving parts of the fan is necessary. Operators must wear appropriate personal protective equipment, such as cut-resistant gloves and protective clothing.
Z.			It is strictly forbidden to: <ul style="list-style-type: none"> • maintenance of the device during its operation, • removing covers and covers during device operation, • Maintenance of the device without disconnecting the power supply.
AA.		Burn	Do not touch the engine after a long-term operation. Allow the electric motor housing and adjacent surfaces to cool down. Additionally, wait until the temperature inside and outside reaches a value that is not hazardous to touch. Operators must be equipped with appropriate personal protective equipment, such as gloves and protective clothing.

5. TRANSPORT AND STORAGE

5.1. GENERAL GUIDELINES FOR TRANSPORT

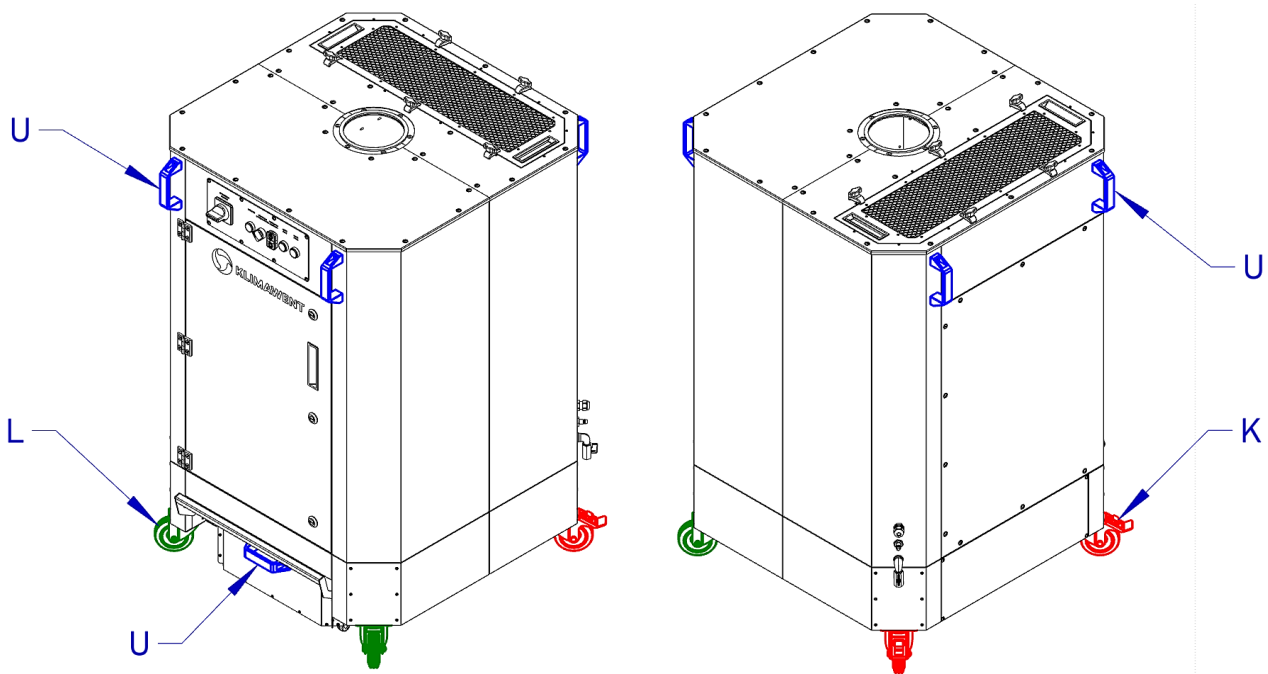
- The temperature during transport should be between -30°C and $+40^{\circ}\text{C}$.
- The device **MUST** be sheltered from atmospheric precipitation to prevent moisture ingress or flooding. The device **MUST** be hermetically shielded from the effects of weather conditions.

5.2. UFO-1000 MOBILE DEVICE

5.2.1. TRANSPORTATION DURING DAILY SERVICE

- Move using the handles located in the corners of the housing.
- Move and position the device on a flat, horizontal surface. Lock the device's wheels after each position change to prevent rolling.

NOTE: Lockable wheels are mounted on the rear of the device – see Picture 12 niżej – item K – on the side opposite the inspection door.



Picture 12 Moving using handles

*U – Transport handle; K – Wheels with locking mechanism (brake);
L – Wheels without a locking mechanism (no brake)*

! DANGER

Possible destruction of the device, property damage, injury or serious bodily harm.



After each change of position of the **mobile device**, the user **MUST** lock the wheels to prevent the device from rolling down an inclined surface.

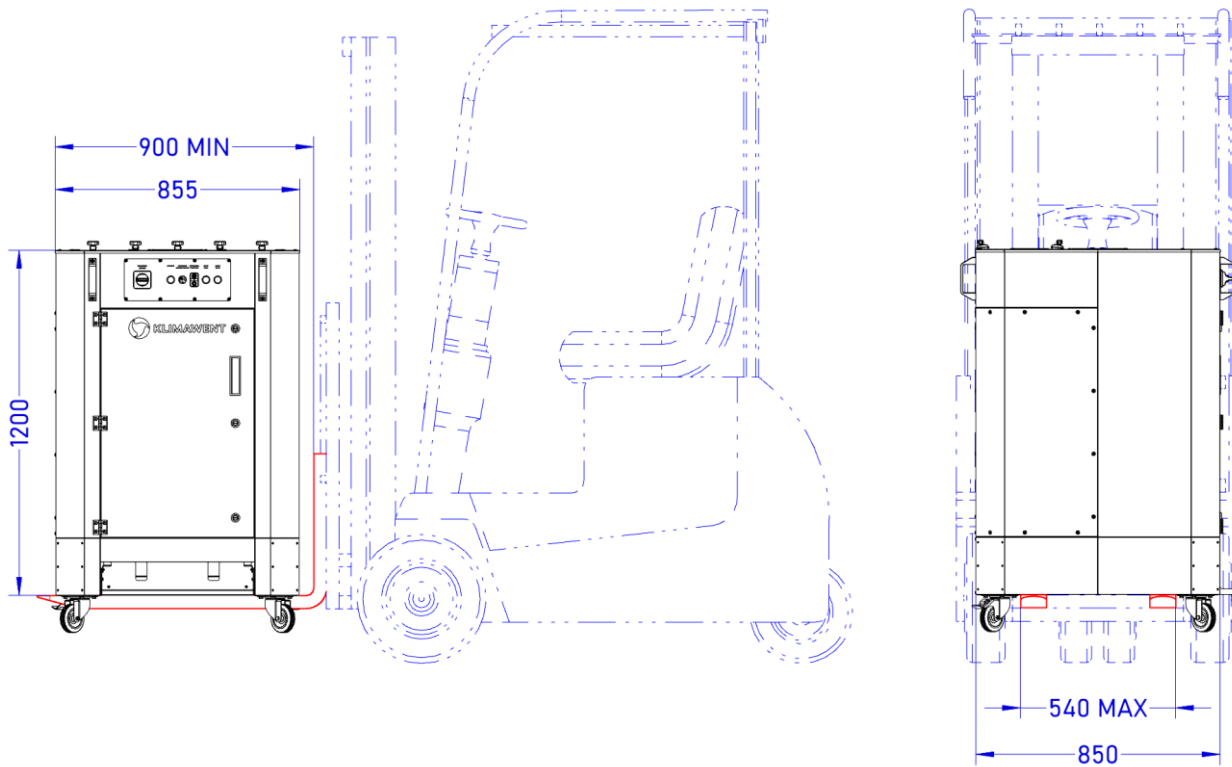


It is **STRICTLY PROHIBITED** to position the mobile unit on an incline **greater than 3%** or on surfaces **that are uneven or insufficiently rigid** to maintain the device in a stable position. Failure to comply with this requirement **may lead to the device tipping over** while manoeuvring the attached extraction arm. The unit remains stable when used with **2m, 3m, or 4m ERGO LUX-L/R** extraction arms, **provided that the above requirements are met.**



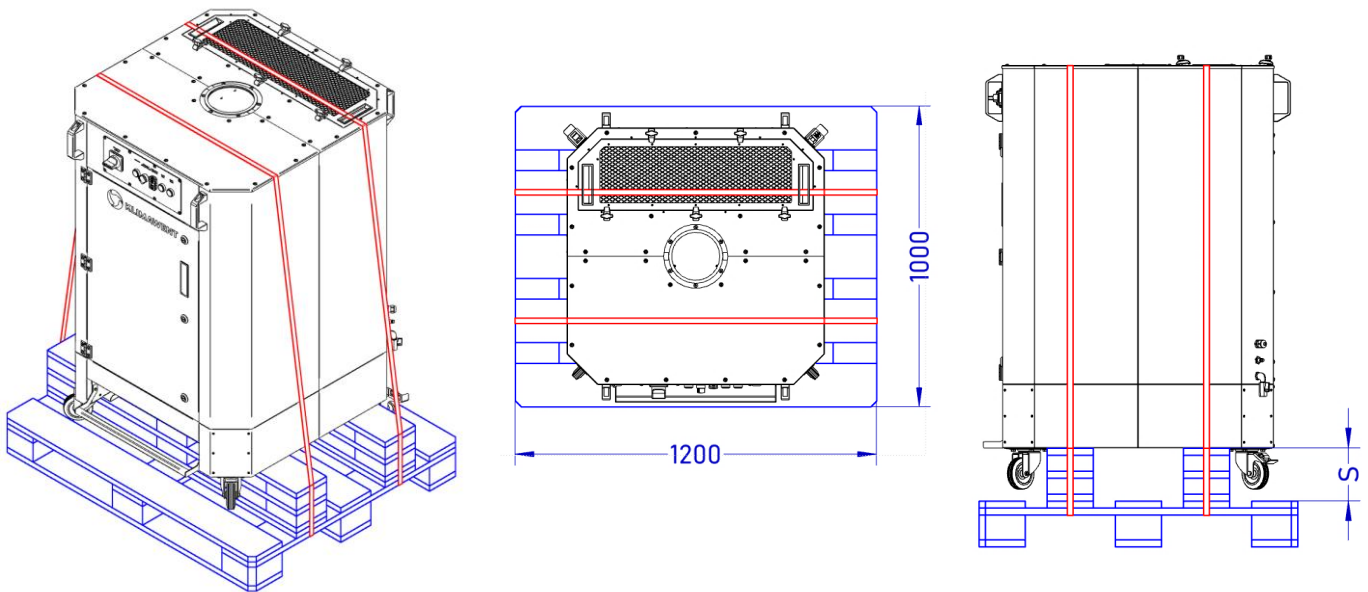
5.2.2. TRANSPORT (MOVEMENT) USING LIFTING EQUIPMENT OR LIFTS

- A. When moving the device over short distances, it may be supported by a **forklift** placed underneath the unit in the area of the **dust container**. Before this, the dust container must be removed, and the **forks** should be positioned between the wheels across the **full width** of the device – from left to right – and lifted upwards as shown below – see **Picture 13**.
- B. **NOTE:** Minimum fork length is 900 mm. Load dimensions: H x W x D = 1200 x 850 x 855 mm.
- C. The device **MUST** be secured at all times during transport using forklifts to prevent it from slipping or tipping over.

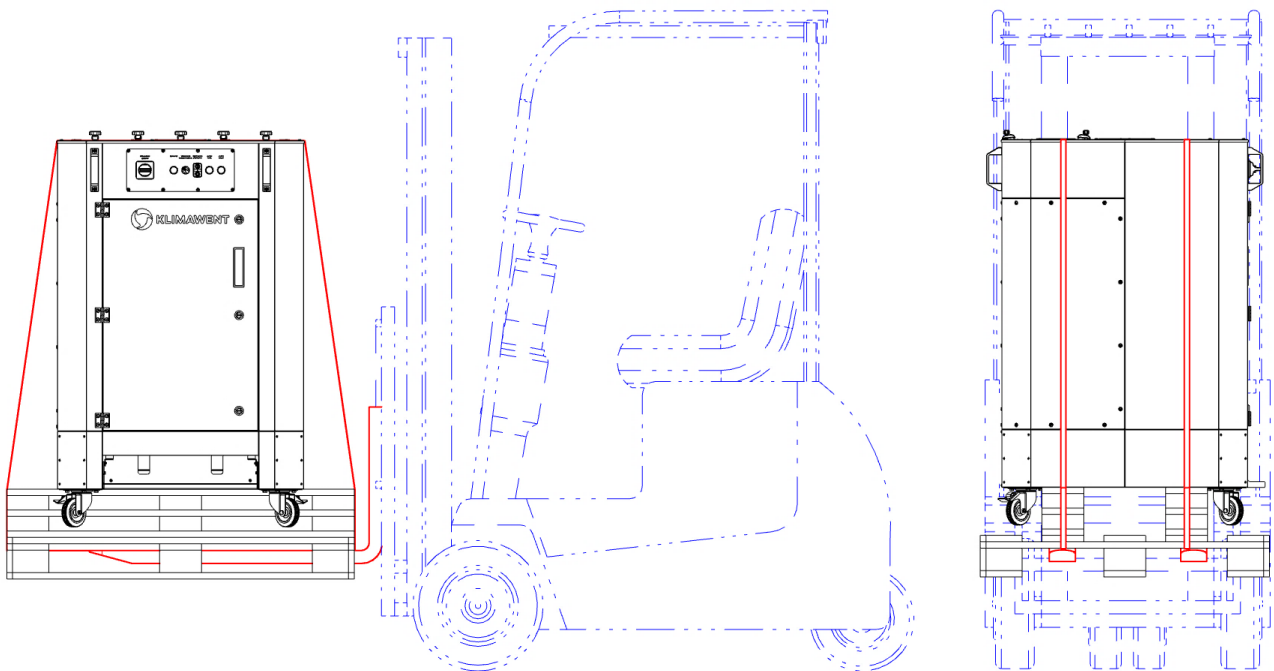


Picture 13 Transport using a forklift

- D. **When moving over longer distances** or lifting higher than 50 cm using forklifts, the device **MUST** be secured to a properly prepared EURO-type pallet – see Picture 14 below. The device **MUST** be lifted and supported between the wheels and secured with straps to prevent it from tipping over. **NOTE:** Adjust dimension **S** so that the wheels do not touch the pallet.



Picture 14 Securing to a EURO-type pallet



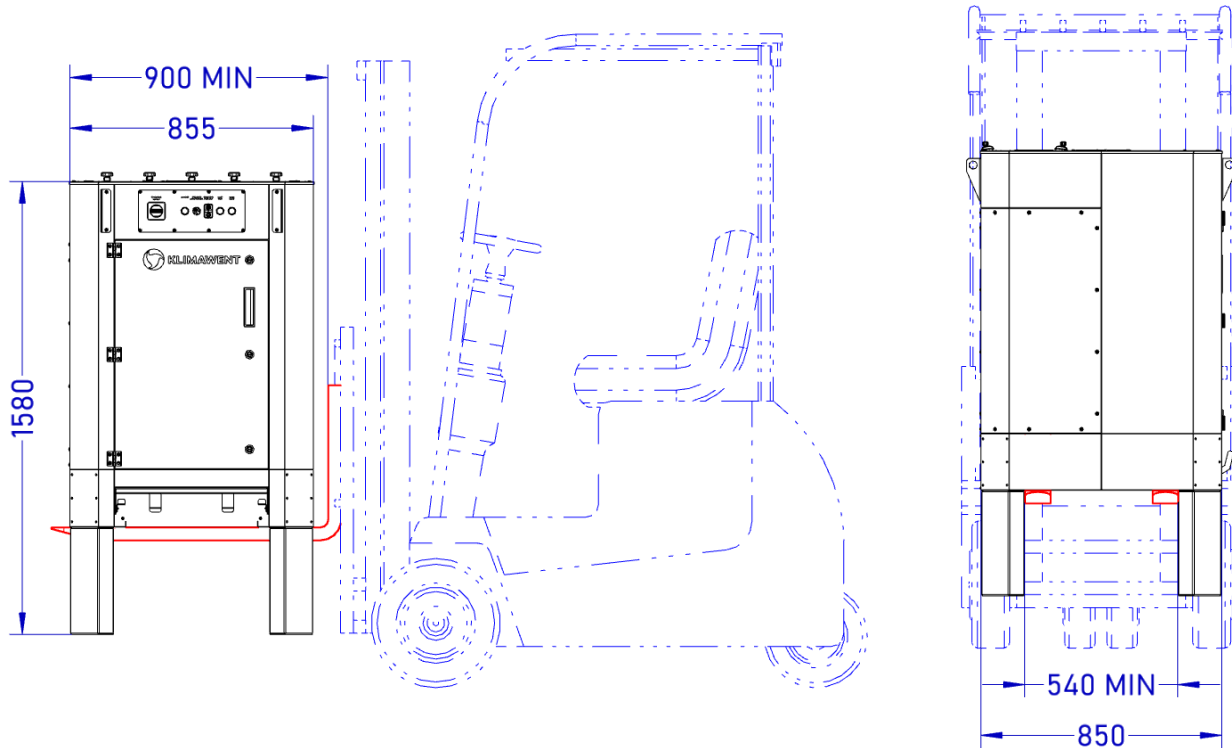
Picture 15 Transport on a EURO-type pallet



5.3. STATIONARY DEVICE UFO-1000-S

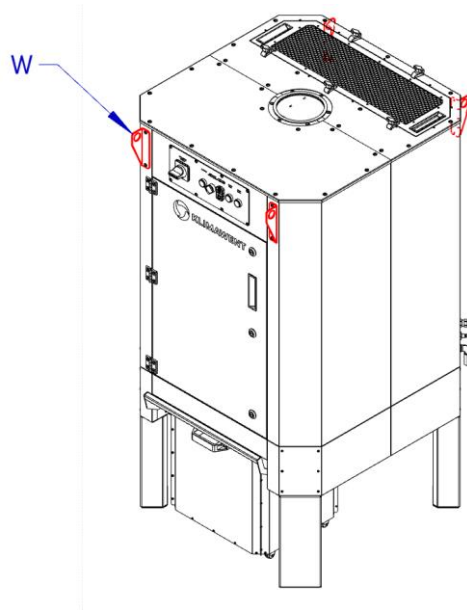
5.3.1. TRANSPORT (MOVEMENT) USING LIFTING EQUIPMENT OR CONVEYORS

- A. When moving over short distances, the device may be supported by a forklift underneath the unit, in the location of the dust container. Before doing so, the container must be removed, and the forks must be inserted between the legs to the full width of the device – from left to right – and lifted upwards as shown below – see Picture 16 below.
- B. **NOTE:** Minimum fork length is 900 mm. Load dimensions: H x W x D = 1580 x 850 x 855 mm.



Picture 16 Transport using a forklift

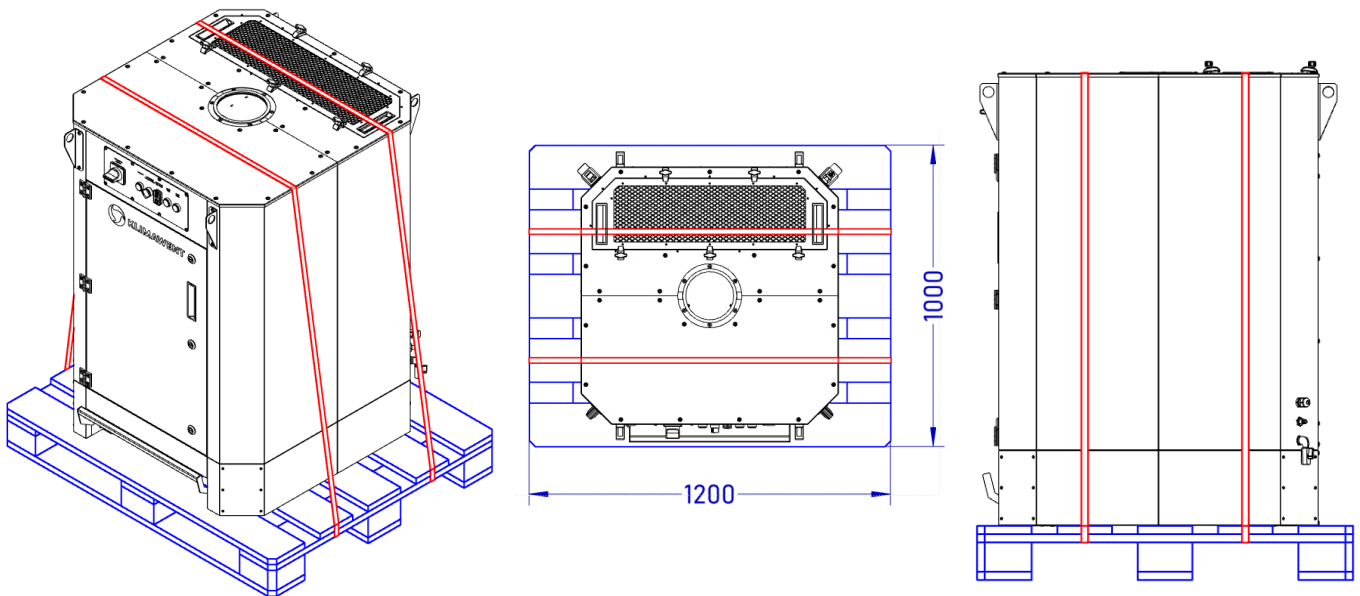
- C. **When moving over short distances or lifting**, the **device** can be transported using **four transport hangers** placed in the corners around the device – see Picture 17 nizej. The diameter of the holes in the hangers is 30 mm.



Picture 17 Transport using hangers

W – Transport hangers

- D. **To move the unit and lift** it with a crane or forklift, or to store it, place it on a pallet and secure it with straps. **The dust container and legs must be removed first** – see Picture 18 below. The unit **MUST** be secured to the pallet with straps to prevent it from tipping over.



Picture 18 Securing to a EURO-type pallet



5.4. STORAGE

- A. The device must be stored in its assembled state, i.e., with covers and doors closed and the dust container installed. It must be protected against moisture and dust ingress. Protect from adverse weather conditions, especially from direct sunlight, other heat sources, or radiation. **Drain compressed air** and condensate from the pressure vessel.
- B. The device may be stored on a EURO-type pallet, as shown in Picture 14 and Picture 18, with components such as the dust container and legs removed; however, in such cases, adequate protection must be provided for the interior against moisture ingress. Removed components must also be secured to the device or on the pallet next to the unit.
- C. The storage area **must be dry, dust-free**, and maintained at a temperature between **-30°C and +40°C**. The device **must be empty and protected against moisture ingress**. Relative humidity must not exceed **95%**, non-condensing.
- D. The device **MUST** be protected from any shocks that could compromise its integrity.
- E. The device **MUST** be protected against oxidising or corrosive substances that could adversely affect sealing materials and accelerate material erosion, e.g., corrosion.
- F. It is **UNACCEPTABLE** to subject the device to forces that could deform or damage the unit's housing.
- G. The motor and fan impeller **mustn't remain stationary** for long periods, both during storage and while the system in which the device is installed is under construction or at a standstill. During these periods, the condition of the impeller and fan must be checked by rotating the impeller to prevent damage to the motor bearings, particularly the oxidation of bearing races.

! WARNING

Risk of damage to the electric motor, together with the control automatics and the cartridge filter



PROTECT the device against mechanical damage and moisture ingress resulting from flooding, spills, or precipitation.



PROTECT the device against extreme temperature conditions during transport. Transport and storage are permitted within a temperature range of **-30°C to +40°C**.

! UWAGA



KLIMAWENT S.A. is not responsible for damage to mechanisms resulting from long-term inactivity.



KLIMAWENT S.A. is not responsible for damage to filters resulting from storage in a place with inadequate humidity and ventilation.

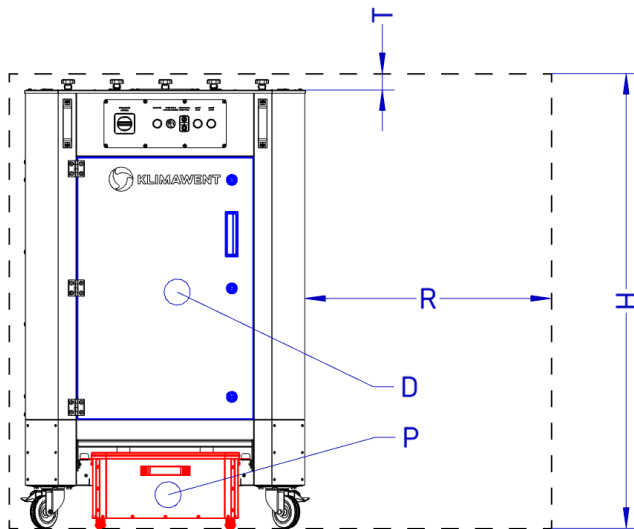
6. ASSEMBLY, INSTALLATION AND COMMISSIONING

6.1. WORK AREA AND COMMUNICATION SPACE

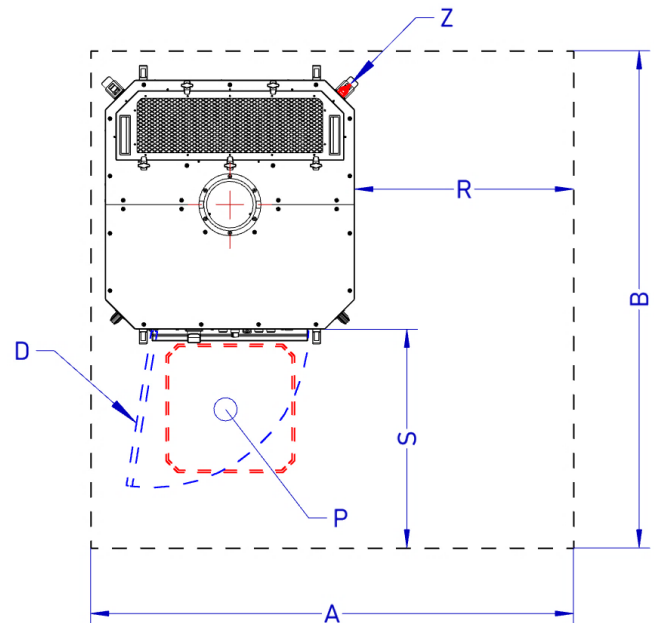
The device must be placed in areas shielded from adverse weather conditions and free from corrosive agents.

For the safety and convenience of communication and ergonomic operation of the device, it is necessary to provide a free area around the machine to prevent the risk of accidents.

Below are diagrams indicating the minimum clearances that must be maintained when positioning the device. The surrounding spaces must also be kept clear to allow for safe maintenance work. Furthermore, sufficient space must remain above the device to ensure adequate ventilation and heat dissipation from the fan's electric motor. **The flow of cooling air to the motor housing must not be obstructed.**



Picture 19 Workspace - Side View



Picture 20 Workspace - Top View

D – Filter inspection door; **P** – Dust container;

Z – Connections – Compressed air connection, Condensate drain valve, Power cable gland

	A [m]	B [m]	H [m]	R [m] ⁷	S [m] ⁸	T [mm]
UFO-1000	1,7	1,7	1,4	0,75 (1,0)	Min 0,75	Min 50
UFO-1000-S			1,7			

⁷ **NOTE:** Passageways between machines and other equipment or walls, intended solely for the operation of these units, should have a minimum width of 0.75 m. If two-way traffic occurs in these passageways, their width must be at least 1 m.

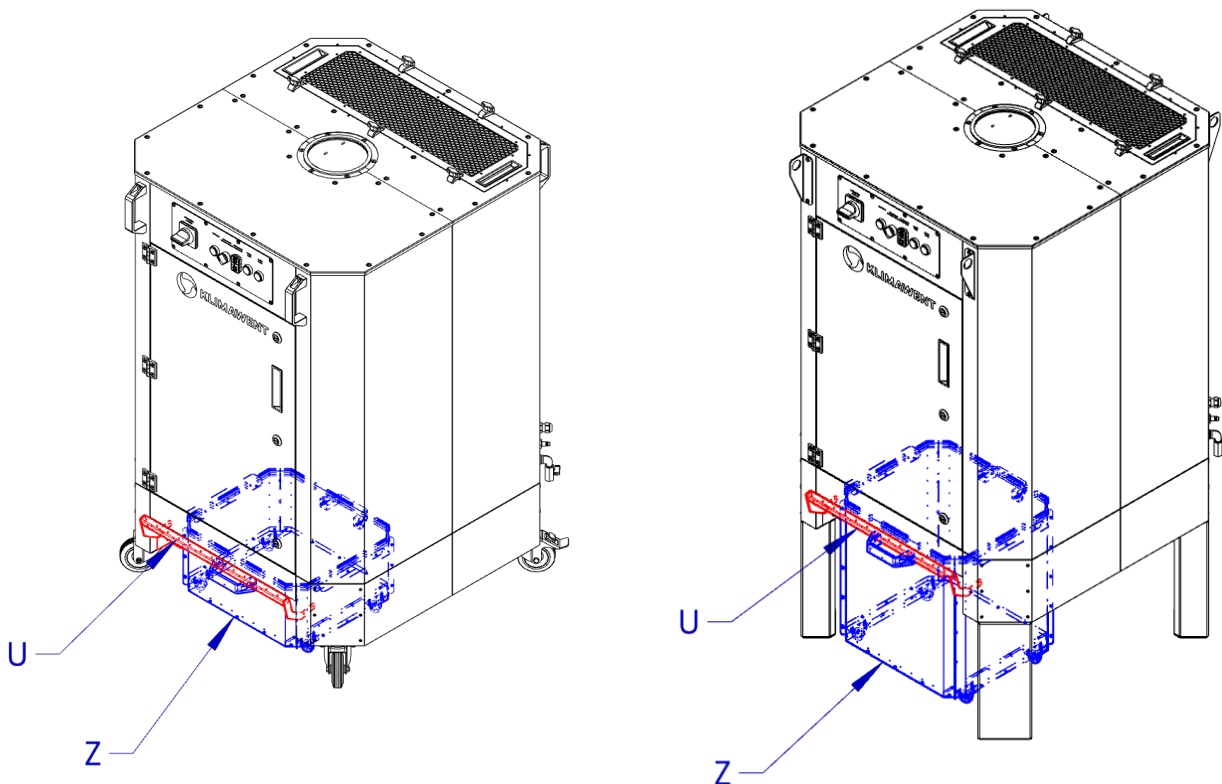
⁸ **NOTE:** Dimension from the side of the access doors to the cartridge filters. If movement around the machine is required while the doors are open, it is recommended to increase this value by an additional 1 m.

6.2. ASSEMBLY

6.2.1. MOBILE DEVICE UFO-1000 and STATIONARY DEVICE UFO-1000-S

The device is delivered ready for use. Before startup, attach the dust container to the bottom of the unit and install the extraction arm onto the extraction stub pipe at the top of the device

The container (see Picture 21 nizej – item. U) must be slid under the device until a perceptible resistance is felt; then, lower the clamping lever (see Picture 21 nizej – item. Z), which will pull the container against the unit. During clamping, the container shifts slightly forward and locks into position under the main filter in the device.



Picture 21 Dust container installation

U – Handle; **Z** – Dust container

6.3. INSTALLING

The size of the area designated for ergonomic and safe operation of the device is shown in section 6.1 – WORK AREA and COMMUNICATION SPACE – see above – Picture 19 and Picture 20 on page 33.

The device must be connected to:

- **electrical power supply** – see point. 6.3.3 on page 35,
- **compressed air network** – see point. 6.3.4 on page 36 and
- **ERGO extraction arm** – see point. 6.3.5 on page 37.

All installation activities must be performed by qualified personnel with certified qualifications, after having first reviewed the requirements – see point. 4.2 – SAFETY RULES AND APPLICATION RESTRICTIONS – on page 21.

! WARNING



The device **MUST** be continuously connected to a compressed air network, ensuring uninterrupted operation of the automatic filter cleaning system. The compressed air **MUST** be prepared by a suitable **filter-reduction unit** with a pressure **between 0.6 and 0.8 MPa** and meeting the purity requirements specified in section 6.3.4– COMPRESSED AIR CONNECTION on page 36.

6.3.1. MOBILE DEVICE

The user must prepare a suitable surface for the size and weight of the device. The surface must be level, flat, and sufficiently rigid to prevent the device from rolling under its own weight or tipping over when manoeuvring the extraction arm. When using a mobile device, lock its wheels after each position change.

6.3.2. STATIONARY DEVICE

The user must prepare a suitable surface for the size and weight of the device. The surface must be level, flat, and sufficiently strong to prevent detachment when the extraction arm is operated. If using a stationary device, it must be secured to the ground. Mounting holes are provided in the device's legs for this purpose.

6.3.3. ELECTRICAL CONNECTION

- A. The device requires an electrical power connection that meets, above all, the minimum requirements for the fan's electric motor, i.e., mains voltage variation must be within $\pm 5\%$. The design and installation of the electrical connection to the power supply must be performed by a qualified electrician and in accordance with the diagrams in point 13 – ELECTRICAL DIAGRAMS on page 64 and the electric motor's operating instructions.
- B. The device **MUST** be powered by single-phase 230 V / 50 Hz alternating current – see point 13 – ELECTRICAL DIAGRAMS on page 64. No modifications are permitted.
- C. The device **MUST** be powered by a current adapted to the power consumption of the device – see technical data in point. 3.3 – TECHNIC DATA on page 17.
- D. The device **MUST** be connected to an installation equipped with a PE wire.

! WARNING



The user **is obliged to comply** with the provisions set out in this manual and the relevant supplementary manuals, i.e., the electric motor operating instructions. This manual **DOES NOT** include the operating instructions for the electric motor.


! DANGER
Risk of severe injury or death due to electric shock!


"The device **MUST NOT** be started until it has been ensured that the continuity and connection of the PE **protective conductor** have been verified.

6.3.4. COMPRESSED AIR CONNECTION

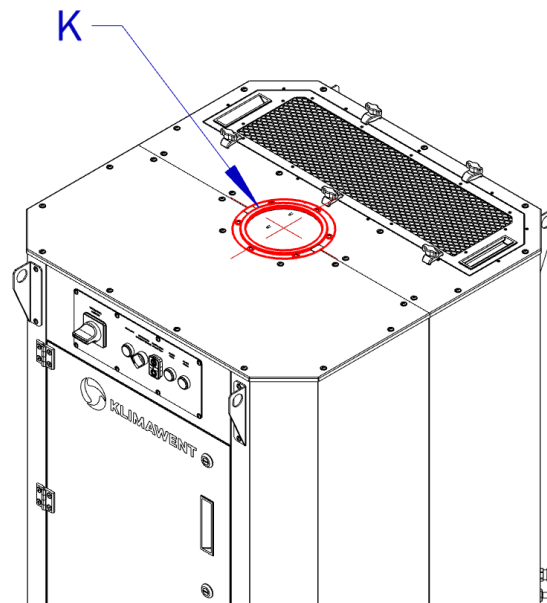
- A. The device must be connected to a compressed air network that ensures an uninterrupted supply of air for the continuous operation of the automatic filter cleaning system. The compressed air must be prepared by a suitable filter-regulator unit at a pressure ranging from **0.6 to 0.8 MPa**, ensuring the appropriate purity classes for individual contaminants; i.e., in accordance with ISO 8573-1, the air supplied to the compressed air filter cleaning system should meet the minimum requirements specified in the table below:

Type of contaminant	Purity class according to ISO 8573-1:2010
Oil	6
Solid particles	4
Humidity and liquid water	4

- B. The design and connection of the device to the network must be carried out by qualified personnel, in accordance with the rules for this type of installation.
- C. The device features a **15 L** compressed air tank operating at a **maximum pressure of 8 bar (0.8 MPa)**. For the filter regeneration system, a pressure range between **0.6 and 0.8 MPa** must be maintained. The tank is equipped with a **Ø1" pulse valve** on the outlet stub, a drain valve at the bottom of the tank, and a **Ø12 mm quick-connect stub** with a check valve for connection to the process installation. The hose with the quick-connector should be pushed onto the **Ø12 mm stub**, and the connection must be checked for leaks. The compressed air tank is not subject to UDT (Office of Technical Inspection) operational supervision, as the condition $V \times P \leq 300 \text{ bar} \cdot \text{dm}^3$ is met (where V – capacity in dm³; P – overpressure in bar).

6.3.5. CONNECTING THE EXTRACTION ARM

The device is equipped with dedicated **ERGO LUX-L/R** extraction arms, **2, 3** or **4 m** long, with a swivel socket that is attached to the connection stub at the central point on the top of the device – see Picture 22 below.

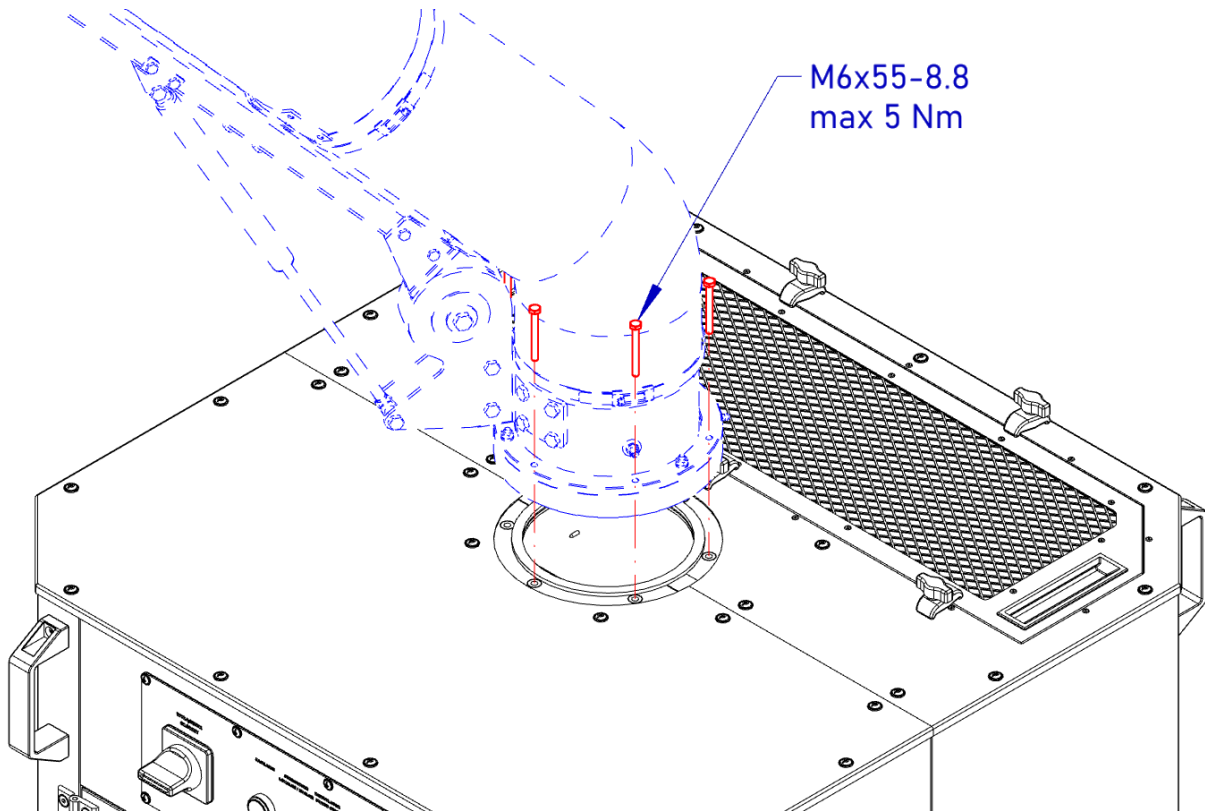


K – Connection stub for ERGO LUX

Picture 22 ERGO LUX mounting stub

To install the **ERGO LUX** type arm, a 10 (11) mm open-end or combination wrench is required for tightening M6 hexagonal bolts. In the case of socket head cap screws (with a hexagonal socket), a 5 mm Allen key (hex key) is required.

When bolting the arm to the stub, tighten the screws alternately to ensure they are tightened evenly. The tightening torque must not exceed 5 Nm. Do not use electric, pneumatic, or similar high-torque drivers! After assembling the extraction arm, check the connection for leaks during a test run with the fan operating, by moving the arm and listening for any air leaks. Tighten the screws further if necessary.



Picture 23 Installation of the ERGO LUX type extraction arm

6.4. COMMISSIONING / CHECKING / TESTING

6.4.1. ELECTRIC MOTOR CHECK

- A. Before starting the motor, it is necessary to:
- Check the condition and connection of the installation to the PE conductor.
- B. During the test run, the following must be checked:
- the supply voltage value,
 - the current consumption of the device,
 - whether there are excessive vibrations or other motor malfunctions.

NOTICE



The user is obliged to comply with the provisions set out in this manual and the relevant supplementary manuals, i.e., the electric motor operating instructions. This manual **DOES NOT** include the operating instructions for the electric motor.

6.4.2. PE CONDUCTOR CHECK IN THE POWER SUPPLY SYSTEM

The device is supplied with a power cord equipped with a single-phase industrial plug with a protective earth (PE) conductor. Before operating the device, check that the protective earth conductor is properly connected to the protective earth conductor in the power supply. Failure to connect the protective earth conductor during operation may result in a risk of electric shock!

! DANGER

Risk of severe injury or death due to electric shock!



The device **MUST NOT** be started until the continuity and connection of the PE **protective conductor** have been verified. Check the condition of the power supply system before starting the device.

6.4.3. CONTROL OF THE ROTATION DIRECTION OF THE FAN IMPELLER

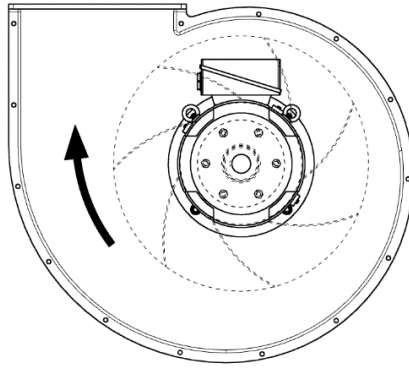
During the initial start-up inspection of the device, the direction of rotation of the fan impeller (the direction of the motor cooling fan) must be checked. It should follow the arrow on the fan housing or as shown below – see Picture 24 on page 40. To do this, remove the rear cover of the device and observe the electric motor fan. Briefly start the device and verify the motor's direction of rotation. The motor cooling fan (and effectively the fan impeller) should rotate as shown below – see Picture 24.

Operation of single-phase devices with the incorrect direction of motor rotation is very rare and results from poor factory connections in the electric motor, but if such a situation occurs, immediately contact the manufacturer **KLIMAWENT S.A.** or its representative – see also point. 6.3.3 – ELECTRICAL CONNECTION on page 35.

! WARNING



The device **MUST NOT** be operated with the rotor rotating in the wrong direction.



Picture 24: Correct rotor rotation direction. View from the electric motor side.

6.4.4. INSPECTION OF THE FILTER REGENERATION SYSTEM ELEMENTS

Before using the device, check the correct selection of the capacity of the compressed air system connected to the device – see the requirements in point 6.3.4 – COMPRESSED AIR CONNECTION – on page 36. The capacity and pressure achieved in the system should correspond at least to those specified in this point.

Compressed air parameters must be monitored throughout the entire service life of the device. Do not allow the maximum pressure to be exceeded, as this may lead to the **destruction of pneumatic components** not designed for high-pressure operation. In the event of damage to the equipment, contact the manufacturer, **KLIMAWENT S.A.**, or their authorised representative

! WARNING

Risk of equipment damage, burns, or severe personal injury resulting from the rupture of pneumatic system components!



REGULARLY CHECK the tightness of pneumatic connections. **IMMEDIATELY REPAIR** any leaks; in the event of component damage that prevents fault rectification, **DISCONNECT** the device from the compressed air supply, **DRAIN** the compressed air tanks, and **REPLACE** the defective component.

6.4.4.1. PULSE VALVES

The pulse valve is designed for use with filtered air at an operating pressure not exceeding **8 bar (0.8 MPa)**. Exceeding this pressure may result in the destruction of the valve.

The pulse valve is controlled by an electromagnetic coil mounted on top, which opens a membrane known as a diaphragm. The switch is powered by **230 V**. The pulse valve is connected to the device's electrical switchboard, which controls its opening and closing. Check the condition of the electrical socket-to-plug connection of the valve according to the service schedule – see point. 8.2 – MAINTENANCE SCHEDULE on page 49.

6.4.4.2. COMPRESSED AIR TANK

Compressed air tanks require monitoring of the condensate accumulated inside and systematic draining. In the event of excessive condensation inside the tank, check the efficiency of the compressed air filtration connected to the filter cleaning system – see the conditions specified in point. 6.3.4 –COMPRESSED AIR CONNECTION on page 36. Additionally, check the pneumatic connections for leaks. Rectify any leaks by tightening (resealing) or replacing damaged components with new ones.



6.4.5. VIBRATION CONTROL

All impellers manufactured by **KLIMAWENT S.A.** are balanced in accordance with the ISO 1940-1 standard with a balance grade of G6.3.

During the final acceptance test of the device, a fan trial run is performed with appropriate vibration level monitoring on the fully assembled machine. **KLIMAWENT S.A.** applies vibration assessment guidelines provided in the PN-ISO 14695 and ISO 14694 standards. Fans integrated into the **UFO-1000** type device manufactured by **KLIMAWENT S.A.** are classified as category BV-3 fans. As such, during acceptance tests, they do not exceed the residual unbalance measured as vibration velocity $V_{rms} = 2.8$ mm/s for rigid mounting or $V_{rms} = 3.5$ mm/s for flexible mounting.

The manufacturer shall not be held liable for the vibration levels of the device (fan) at the final installation site. Measured vibration values are influenced by the levelling of the device, as well as the strength and flexibility of the supporting structure; therefore, these factors must be taken into account during 'in situ' vibration assessments.

Excessive fan vibrations must be avoided, as they can lead to deformation or cracks in the impeller structure, bearing seizure, increased noise levels, and the loosening of bolts and nuts in critical connections. Ultimately, this may destroy rotating components and create a situation threatening the safety of operators or bystanders.

It is recommended to continuously monitor fan vibrations using a sensor or to perform vibration measurements during fan inspections at least every **10,000 operating hours**, or whenever increased noise, vibrations, or other symptoms indicating a potential fault are noticed – see 8.4 – MEASURING VIBRATIONS OF THE FAN on page 54.

The measured vibration value expressed as velocity **V_{rms}** should not exceed **$V_{rms} = 6.3$ mm/s**. A value of **$V_{rms} = 11.8$ mm/s** is considered an **alarm level**, while a value of **$V_{rms} = 12.5$ mm/s** requires an immediate emergency **shutdown** of the device.



7. OPERATION USE

7.1. OPERATION

7.1.1. SWITCHGEAR AND CONTROLLER

The device requires a single-phase 230 V / 50 Hz AC power supply. The device is equipped with a 5 m power cord terminated with a single-phase industrial plug.

The device features a control panel (see Picture 25 on page 44 below) connected to the electrical assembly that powers the fan and the pulse valve used for cartridge filter cleaning. The electrical assembly is located at the bottom-rear of the device in a sealed compartment. The interior of the switchgear contains electrical components (see point 13.1.1 – page 65). The control panel, located at the front of the device on the inspection door side, contains control elements used to monitor and manage the device's operation.

! NOTICE



The device can be controlled from a panel on the electrical distribution board (**LOCAL**) or from another location (**REMOTE**) by connecting an external panel to terminals 4 and 5 on the distribution board using a NO relay signal.

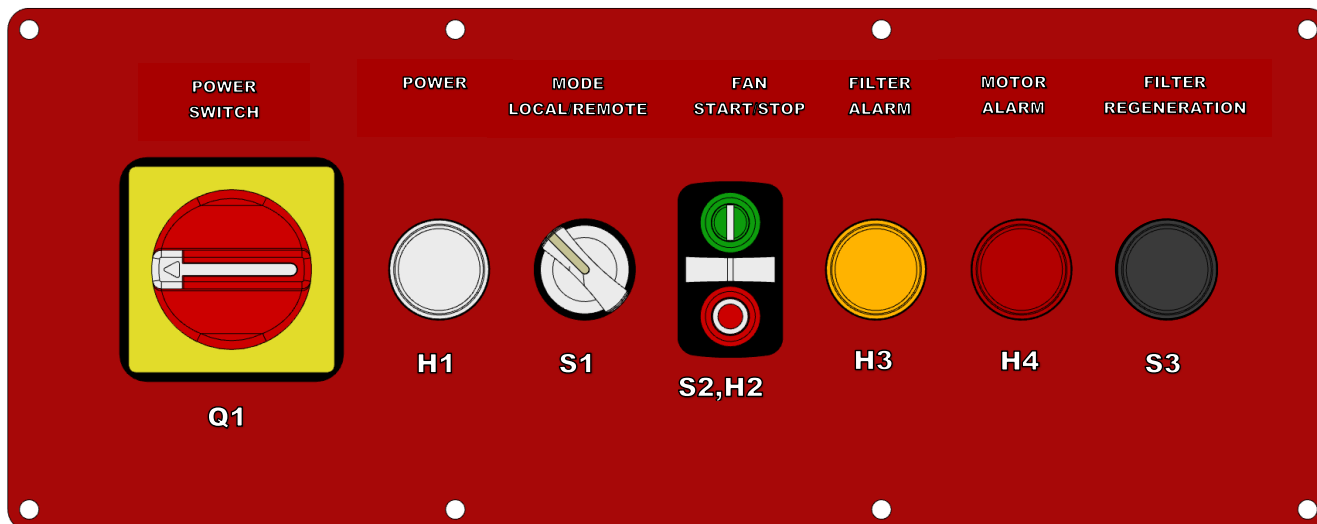
The **control panel** is located on the front of the device (on the side of the inspection door) and consists of light indicators and buttons, such as:

- **S1 "CONTROL"** selector switch – used to change the operating mode,
- **H1 signal lamp (white) "POWER"** – indicates that the control voltage is on (continuous light),
- **H2 signal lamp (white) "FAN"** – located in the S2 switch, indicates fan operation (**continuous light**) – located in the **S2** switch, indicates fan operation (continuous light),
- **H3 signal lamp (orange) "FILTER ALARM"** – indicates that the cartridge (main) filter has reached its clogging limit,
- **H4 signal lamp (red) "MOTOR ALARM"** – indicates motor fault conditions,
- **S2 "STOP" button (red)** – stops the fan motor,
- **S2 "START" button (green)** – starts the fan motor,
- **S3 "MANUAL CLEANING" button (black)** – allows for manual generation of a compressed air pulse (manual regeneration),
- **Q1 main switch** – turns the device's power supply on.

! CAUTION



Each time the **S3 "MANUAL CLEANING"** button is pressed, a compressed air pulse is generated until the tank is depleted. In such a case, wait for the tank to refill. The device **MUST** be connected to an industrial compressed air supply network.



Picture 25 Control panel appearance

H1 – White light indicating the presence of voltage in the power supply; **S1** – Operation mode switch;
S2 – Fan start/stop button; **S3** – Manual override button for additional filter regeneration;
H2 – White light indicating fan operation;
H3 – Orange light indicating the cartridge filter is at the limit of contamination;
H4 – Red light indicating an engine alarm; **Q1** – Power disconnect switch

7.1.2. TURNING THE MAIN POWER ON

! WARNING

Danger:

- Entanglement hazard: Risk of clothing or limbs being drawn into the machine;
- Impact hazard: Risk of injury from doors slamming shut due to negative pressure.
- Compressed air hazard: Risk of being struck by a high-pressure air pulse;
- Air blast hazard: Risk of impact from exhaust air exiting the outlet chamber;
- Noise hazard: Exposure to excessive impulse noise.



Before starting the device, **ensure that** the filter inspection doors and all device covers are closed.



DO NOT place limbs, other body parts, or clothing near an unguarded suction inlet while the fan is operating. The device is designed to function properly only when assembled with a compatible **ERGO LUX**-type extraction arm.

- To turn on the power, set the **Q1** main switch located on the control panel to the **ON** position – see Picture 25 on page 44 above. The supply circuit will be energised, and the white **H1** indicator lamp on the control panel will light up.

7.1.3. TURNING THE FAN ON

- Press the green **START** button on the **S2** switch located on the control panel. Fan operation is indicated by the white **H2** lamp in the centre of this switch – see Picture 25 on page 44 above.

7.1.4. TURNING THE FAN OFF

- Press the red **STOP** button on the **S2** switch located on the control panel. The fan will come to a stop via **coast-down**. The white **H2** lamp will turn off – see Picture 25 on page 44 above.

7.1.5. TURNING THE MAIN POWER OFF

- A. Turn off the power by setting the **Q1** main switch to the 'OFF' position. The white **H1** indicator lamp will turn off – see Picture 25 on page 44 above.

7.1.6. MANUAL FILTER REGENERATION

- A. Press the black **S3** 'MANUAL CLEANING' button – a compressed air pulse will be generated.

NOTICE



Manual cleaning of the cartridge filter can be used at any time during the operation of the device.

7.1.7. ALARM SIGNALS

! WARNING



RESPOND IMMEDIATELY to alarm signals displayed by the control unit and take instantaneous **CORRECTIVE ACTIONS!**

7.1.7.1. MOTOR FAILURE

In the case of **UFO-1000** type devices with the **ZE-UFO-1000** electrical switchgear, the fan motor is protected by a **Q1M** motor starter (circuit breaker).

The **Q1M motor starter** protects the fan motor against overload, short circuits, and the consequences of a locked rotor (stalled start). If the **Q1M** trips, the control system will disconnect the motor supply circuit, and the alarm will be indicated by the red **H4** 'MOTOR ALARM' lamp. After this alarm occurs, the cause must be identified, followed by an inspection of the motor's electrical and mechanical condition.

! CAUTION



Triggering an alarm results in the control **system being locked** until the cause of the alarm is resolved.

7.1.7.2. FILTER FAILURE

When the cartridge filter reaches its maximum flow resistance, the **B1** pressure switch will trigger an alarm signal, indicated by the yellow **H3** 'FILTER ALARM' lamp. This alarm occurs when the cartridge filter reaches its clogging limit, usually caused by permanent contamination (i.e., wear and tear). Nevertheless, the first step should be to clean the filter manually; blow it out with compressed air or use a dedicated cleaning device. In such a situation, perform filter maintenance – see point. 8.2.2 – MAINTENANCE OF THE CARTRIDGE FILTER on page 50.

Jeżeli oczyszczenie filtra poza urządzeniem nie da oczekiwanego rezultatu w postaci przywrócenia skuteczności filtracji sprzed wystąpienia alarmu, filtr należy wymienić na nowy.

7.1.8. EMERGENCY STOP

To perform an emergency stop of the device, set the **Q1** switch to the 'OFF' position or press the red 'STOP' field of the **S2** switch on the electrical unit panel – see Picture 25 on page 44 above.



! WARNING



After disconnecting the power, the fan will come to a stop via **coast-down due to the inertia of the rotating impeller and the electric motor!**

7.1.9. RETURN TO NORMAL OPERATION AFTER THE PROBLEM IS SOLVED

Restarting the device after an emergency stop or failure requires an operational check – start the device and allow it to run **for at least 15 min** to stabilise its parameters and ensure that there are no issues and the fault does not recur. After this period, the device can be safely put back into service.

Restart the device in accordance with point 7.1.2 – TURNING THE MAIN POWER ON on page 44 and 7.1.3 – TURNING THE FAN ON on page 44 taking into account all the guidelines presented in „Table 2: Safety rules and information on residual risks” – see point. 4.5 – RESIDUAL RISK INFORMATION on page 24.

7.1.10. UNPLANNED STOPPING AND RESTARTING

In the event of a power failure, the fan will come to a stop via coast-down. In such a situation, before restarting, first inspect the condition of the device to ensure that the electrical components in the electrical unit are operational and have not been damaged.

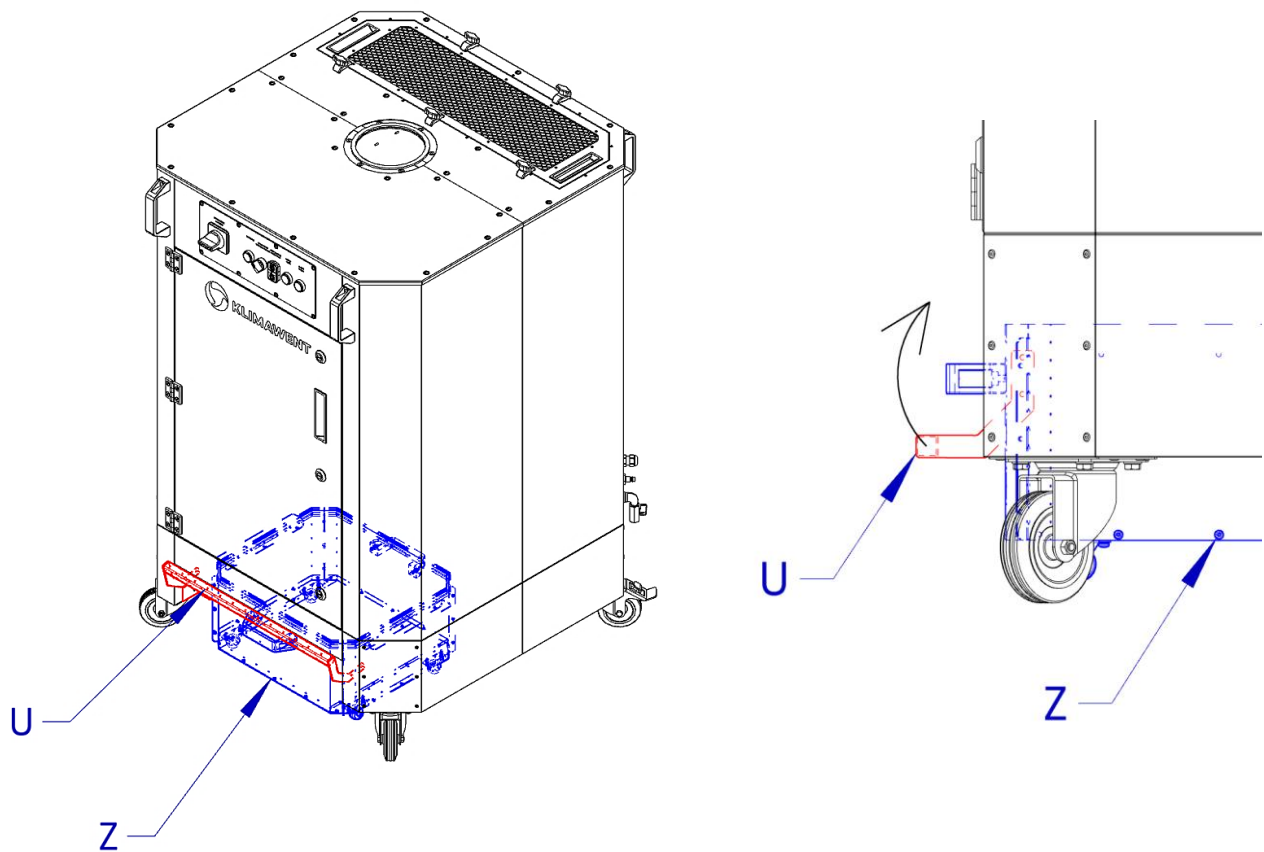
The device should be started and allowed to run for **at least 15 min** to stabilise its parameters and ensure that there are no issues. After this period, the device can be safely put into operation.

Restart the device in accordance with point. 7.1.2 – TURNING THE MAIN POWER ON on page 44 and 7.1.3 – TURNING THE FAN ON on page 44, taking into account all the guidelines presented in „Table 2: Safety rules and information on residual risks” – patrz pkt. 4.5 – RESIDUAL RISK INFORMATION on page 24.

7.1.11. REMOVING AND EMPTYING THE DUST BIN

During the daily operation of the device, monitor the fill level of the dust container. Do not allow the container to overflow – this may cause dust to be re-entrained (carried away) during operation.

- A. Turn off the fan using the **S2 'STOP'** button on the control panel and wait until the fan stops and the airflow ceases – see 7.1.4 – TURNING THE FAN OFF on page 44.
- B. Turn off the power using the **Q1** main switch – see 7.1.5 – TURNING THE MAIN POWER OFF on page 45.
- C. Pull the lever clamp upwards – see Picture 26 below – item U – located in front of the container at the bottom of the device. The container – item Z – will be lowered onto its wheels.
- D. Pull out the container and empty it, removing dirt if necessary.
- E. Slide the container back into position and lower the lever clamp, pulling the dust container up toward the device until you feel resistance. During this process, the container will move forward, centring itself under the cartridge filter discharge chute.
- F. Turn on the power using the **Q1** main switch – see 7.1.2 – TURNING THE MAIN POWER ON on page 44.
- G. The device is ready for operation.



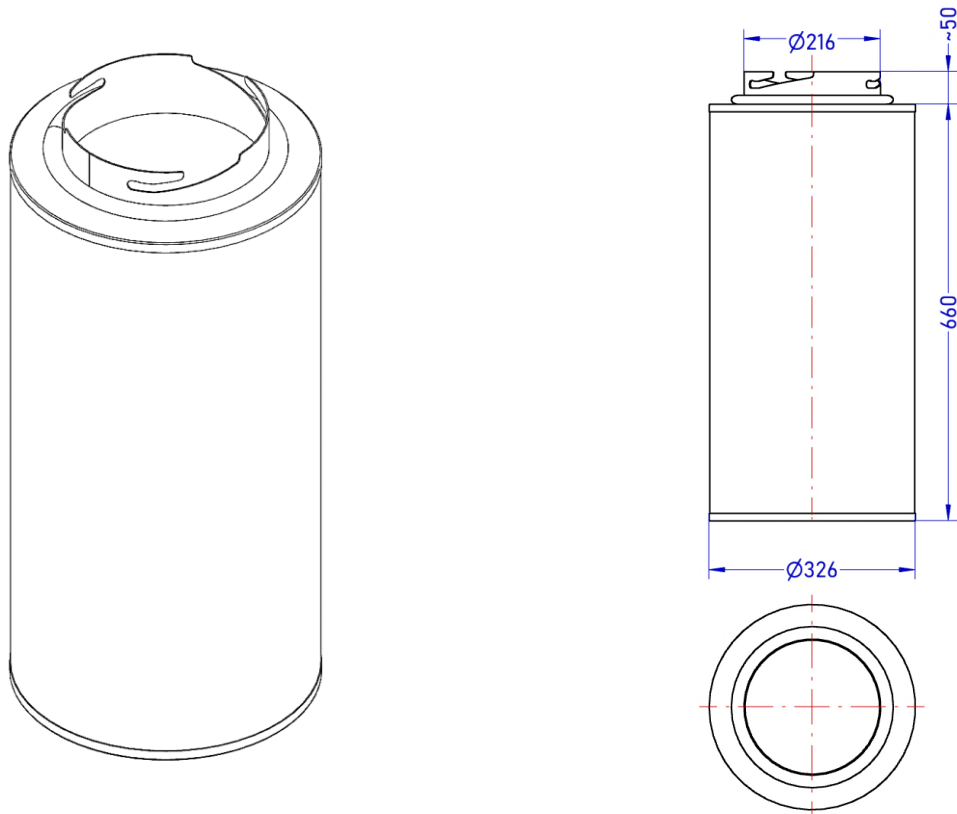
Picture 26: Removing the dust container

7.1.12. REMOVING THE CARTRIDGE FILTER

The device is equipped with an automated cartridge filter regeneration system. Compressed air pulses are generated every 2 min from the moment the device starts until it is turned off, ensuring uninterrupted operation. Nevertheless, dust accumulating on the filter over time may significantly reduce the suction power, which will eventually trigger the '**FILTER ALARM**' signal. In such a situation, the filter must be removed to inspect its condition and perform maintenance.

The procedure for removing the cartridge filter for maintenance is described below – see point. 8.2.2 – MAINTENANCE OF THE CARTRIDGE FILTER on page 50




- A. Turn off the fan using the **S2 'STOP'** button on the control panel and wait until the fan stops and the airflow ceases – see 7.1.4 – TURNING THE FAN OFF on page 44.
- B. Turn off the power using the **Q1** main switch – see 7.1.5 – TURNING THE MAIN POWER OFF on page 45.
- C. Unscrew and open the filter inspection door.
- D. Remove the cartridge filter by unscrewing it from its socket. To do this, rotate it counterclockwise while lifting the filter. During removal, try not to pull excessively on the filter pleats.



Picture 27 Cartridge filter with TWIST connection

7.2. PERSONAL PROTECTIVE EQUIPMENT

During operation, maintenance, and cleaning—i.e., when using the device, emptying dust and sediment from the container, cleaning the interior of the container, or performing other maintenance tasks—always wear personal protective equipment (PPE):

RECOMMENDED PERSONAL PROTECTIVE EQUIPMENT (PPE)	
	<p>Dust Mask Required.</p> <p>This warning indicates that personal protective equipment (PPE) is required. Protective equipment must always be worn during operation and maintenance.</p>
 	<p>Disconnect the device from the power supply.</p> <p>This warning indicates the requirement to disconnect the device from the power supply when performing maintenance, troubleshooting, or similar activities that require opening covers and accessing hazardous components, particularly the fan impeller.</p>

See also the rules described in the point. 4.2 – SAFETY RULES AND APPLICATION LIMITATIONS on page 21 above.

8. MAINTENANCE AND REPAIR MANUAL

8.1. GENERAL GUIDELINES

! WARNING



DISCONNECT the device from the power supply, **TURN OFF** the control system, and **WAIT** until all mechanisms have come to a complete stop. **SECURE** the device against accidental or unauthorised startup!



USE personal protective equipment, as well as protective clothing and safety footwear – see point. 4.3 – REQUIRED PERSONAL PROTECTION on page 23! **FOLLOW** safety principles – see the guidelines in point. 4.5 – RESIDUAL RISK INFORMATION on page 24.

! CAUTION



The **USER** is responsible for the maintenance of the device and its components. Systematic maintenance is a prerequisite for safe operation and fulfilment of the **WARRANTY TERMS**.



All repairs **MUST BE PERFORMED BY THE MANUFACTURER** or its **REPRESENTATIVE**. In special cases, repairs may be performed by the **USER**, but for this purpose, you must contact the manufacturer, **KLIMAWENT S.A.** or its representative.

8.2. MAINTENANCE SCHEDULE

Table 2: Recommended inspection and maintenance intervals

INTERVAL	ACTION	REMARKS
Daily routine inspections and activities	Check the container level and, if necessary, remove dust and clear away any sediment.	Point 8.2.1, 8.2.3
Monthly	Check the compressed air tank and drain any condensate.	Point 8.2.5
Every 3–6 months	Clean the device and its components to avoid excessive dust accumulation inside and outside.	Point 8.2.1, 8.2.3
Every 18–24 months	Check the condition of the electric motor.	Point 8.2.7
	Check the condition of the pneumatic system components and the solenoid valve. Connect the compressed air supply and open the air inlet to the device. Listen for any air leaks near the threaded connections of the internal pneumatic system and check the integrity of the quick-connect coupling on the external stub pipe.	Point 8.2.6
	Clean the cartridge filters or replace them with new ones if a filter is worn out—i.e., if the device does not return to its rated flow capacity despite manual or mechanical cleaning, or if there is perforation or permanent contamination significantly reducing the airflow.	Point 8.2.2
Every 2 years	Check that the fan impeller does not rub against the fan housing. Inspect through the fan outlet and perform a visual and audible check. Measure the fan vibrations.	Point 8.2.7



8.2.1. MAINTENANCE OF THE DEVICE

Check the cleanliness of the internal and external surfaces of the device. Prevent excessive dust accumulation on the unit and inside the cartridge filter chamber.

8.2.2. MAINTENANCE OF THE CARTRIDGE FILTER

A visual inspection of the cartridge filter must be performed every time dust is removed from the container under the hopper. Inspections must also be carried out upon detecting a noticeable drop in device performance that persists over a long period, **regardless of the filter cleaning system's operation**—i.e., when the '**FILTER ALARM**' (ALARM FILTR) appears on the control panel or if there is a significant increase in airflow combined with increased noise levels. In such cases, the filter must be removed from the device and inspected thoroughly.

! WARNING

Risk of device damage or operational malfunctions.



MOISTURE or **OIL** contained in the filtered air and **in the air used for filter cleaning MAY DAMAGE** the filters! The device **MUST** be connected to a compressed air supply prepared by a suitable filter-regulator unit, with pressure ranging from **0.6 to 0.8 MPa**, meeting the cleanliness requirements specified in point. 6.3.4 – COMPRESSED AIR CONNECTION on page 36.

Table 3 Cartridge Filter Maintenance

No.	OBJECTIVE	SPECIFICATIONS	PROCEDURE
1.	Check that the filter is correctly secured in the rotary mount	Check for leaks between the filter bulkhead and the filter gasket.	Unscrew the filter from the mount and inspect the contact surface – characteristic dust (dirt) streaks crossing the gasket seal line and entering the intake opening of the filter mounting socket indicate poor gasket seating. If no such gaps are visible, the filter has been correctly secured. Screw the filter back in.
2.		Inspect the rubber gasket for damage: <ul style="list-style-type: none"> • cracks • tears • fragmentation (material loss). 	Bond the damaged area. Use an adhesive specifically designed for EPDM gasket repair. Otherwise, contact the manufacturer KLIMAWENT S.A. or their representative to replace the filter – see point. 8.5 – SPARE PARTS on page 56.
3.	Check the quantity and type of contaminants	Determine: <ul style="list-style-type: none"> • level (quantity) of contamination, • presence of damage, • presence of foreign objects, • presence of sticky deposits (stains) that are difficult to remove. 	Remove the filter from the device and clean it manually or mechanically using a dedicated cleaning device. In case of filter wear (permanent clogging), replace it with a new one—contact the manufacturer KLIMAWENT S.A. or their representative for this purpose – see point. 8.5 – SPARE PARTS on page 56.

No.	OBJECTIVE	SPECIFICATIONS	PROCEDURE
4.	Check the condition of the filter surface	Identify: <ul style="list-style-type: none"> • presence and number of creases, • presence and number of abrasions and scratches, • presence of perforations. 	In the event of damage to the filtration surface, replace the filter with a new one—the filter is not repairable. Contact the manufacturer KLIMAWENT S.A. or their representative – see point. 8.5 – SPARE PARTS on page 56.

8.2.3. MAINTENANCE OF THE PRE-FILTER

The primary purpose of the pre-filter is to protect the main filter by preventing 'large' particles from reaching its surface; therefore, it can serve as protection against aspirated hot or even glowing particles.

The pre-filter is a simple mechanical filter in the form of a fine mesh, which is susceptible to the accumulation of sticky and tarry substances.

! WARNING

Risk of device damage and operational malfunctions.



MOISTURE or **OIL** contained in the **flowing air CAN DAMAGE** the filters! Before reinstalling a cleaned pre-filter—especially if washed with water—dry it thoroughly to prevent any residual moisture from penetrating the cartridge filter!

Table 4: Pre-filter maintenance

No.	OBJECTIVE	SPECIFICATIONS	PROCEDURE
1.	Check the quantity and type of contaminants	Determine: <ul style="list-style-type: none"> • contamination level (quantity), • presence of damage, • presence of foreign objects, • presence of sticky deposits (stains) that are difficult to remove. 	Remove the filter from the device and clean it manually using a wire brush, blow it out with compressed air, or wash it and dry it thoroughly.



8.2.4. MAINTENANCE OF THE DUST CONTAINER

Slide the container out of the device and empty it of dust and other contaminants. The dust container is the component most susceptible to the buildup of dust and hard debris, which can permanently adhere to internal surfaces; therefore, its condition must be monitored systematically.

The dust container allows the interior to be lined with a fitted plastic or paper bag, while the clamping mechanism ensures a tight seal when an additional bag is used. Using a bag significantly prevents excessive contamination of the container's interior while simultaneously protecting against dust spillage and airborne dust suspension during emptying.

Table 5: Maintenance of the dust container

No.	OBJECTIVE	SPECIFICATIONS	PROCEDURE
1.	Check the quantity and type of contaminants	Determine: <ul style="list-style-type: none"> contamination level (quantity), presence of foreign objects, presence of sticky deposits (stains) that are difficult to remove, and hard debris 	Remove the container from the device and clean it manually; blow it out with compressed air, or wash it and dry it thoroughly.

8.2.5. MAINTENANCE OF COMPRESSED AIR TANK AND COMPONENTS

Periodically check all threaded connections of the tank and drain the tank using the ball valve mounted on the device. In the event of audible leaks in threaded connections, locate the source and eliminate the leak by tightening the connection. In case of significant leakage, completely depressurise the tank using the condensate drain valve, unscrew the leaking component, and reseal it using appropriate sealing technology for compressed air threaded connections. If any component of the tank assembly is damaged, replace it with a new one. For this purpose, contact the manufacturer **KLIMAWENT S.A.** or their representative.

! WARNING

Risk of equipment damage or operational malfunctions.



DO NOT operate the device if the compressed air system is leaking or damaged!

Tabela 6 Konserwacja zbiornika sprężonego powietrza i instalacji

No.	OBJECTIVE	SPECIFICATIONS	PROCEDURE
1.	Check the pneumatic system for leaks.	Detect: <ul style="list-style-type: none"> leaks, loose connections, cracks in pneumatic components. 	Remove the rear and top covers of the device and inspect the pneumatic system. Tighten any loose components. Replace any damaged components with new ones. For this purpose, contact the manufacturer KLIMAWENT S.A. or their representative.

The tank assembly consists of the following components:

- **15 L pressure tank** – see Picture 7 – item 13a – page 14;
- **electromagnetic pulse valve** located above the cartridge filter – see Picture 6 – item 13b – page 14;
- **condensate drain ball valve** located on the outside of the device – see Picture 9 – item 13c – page 15,



- a **check valve** located at the compressed air connection port in the centre of the fan chamber – see Picture 9 – item 13d – page 15.

8.2.6. MAINTENANCE OF PULSE VALVES

The solenoid valve used does not require routine maintenance; however, the electrical connection must be checked—specifically, the plug's fit on the membrane actuator, the grounding status, and the valve's airtightness (audible leaks in the pneumatic system). In the event of a membrane leak (damage), the valve must be replaced with a new one. For this purpose, contact the manufacturer **KLIMAWENT S.A.** or its representative.

To diagnose leaks in the pulse valve, connect the compressed air supply and open the air inlet valve to the device. Remove the top covers of the device until the internal pneumatic components are exposed, or remove the cartridge filter and look through the intake opening toward the pulse valve. Check for any audible air leaks. If a leak is detected, tighten the components or unscrew them and reseal the connection. If the issue persists, replace the component with a new one—for this purpose, contact the manufacturer **KLIMAWENT S.A.** or their representative.

8.2.7. MAINTENANCE OF THE FAN

In the event of audible noise coming from the fan, it may indicate:

- a foreign object being sucked into the fan,
- • damage to the electric motor bearings,
- • damage to the impeller.

All the above situations require dismantling the fan and inspecting its interior. Remove the rear cover by unscrewing it, and then dismantle the fan from the suction bulkhead. All activities must be performed after disconnecting the device from the power supply.

The dismantled fan must be checked for the presence of foreign objects inside, which should be removed by following the steps below:

- rotate the impeller several times, checking for any rubbing between components;
- • while rotating, check if the electric motor bearings emit sounds indicating damage;
- • while rotating, check if the impeller moves freely without jerks that would indicate the presence of foreign objects inside the fan;
- • While rotating, check if the impeller has any axial or radial play, indicating wear of the electric motor bearings.

During scheduled fan maintenance:

- A. Check the correctness and tightness of all mechanical and electrical connections;
- B. Check for the presence of any foreign objects inside the fan.
- C. Rotate the impeller by turning the electric motor's cooling fan to ensure the impeller moves freely and no sounds indicating foreign objects or motor bearing wear are audible.

In the event of vibrations or noise during fan operation, perform a vibration measurement on the motor (see point 8.4 – MEASURING VIBRATIONS OF THE FAN on page 54) and conduct a visual and 'audible' inspection for any contact between the impeller components and the inlet stub or other housing elements. If excessive vibrations are detected, contact the manufacturer, **KLIMAWENT S.A.**, immediately to replace the parts with new ones.



! WARNING

Risk of device damage or operational malfunctions.



It is **PROHIBITED** to use the device with a damaged fan or one exhibiting excessive vibrations during operation. This could lead to the destruction of the impeller or motor, or cause a fire or explosion due to sparking!

8.3. SERVICE AND REPAIR

! CAUTION



The **USER** is responsible for the maintenance of the device and its components. Systematic maintenance is a prerequisite for safe operation and for fulfilling the **WARRANTY TERMS**.



All repairs must be **PERFORMED BY THE MANUFACTURER** or its **REPRESENTATIVE**. In special cases, repairs may be performed by the USER, but only after contacting the manufacturer **KLIMAWENT S.A.** or its representative.

8.4. MEASURING VIBRATIONS OF THE FAN

It is recommended to perform fan vibration measurements during maintenance inspections according to the schedule for the specific device type. This is typically done after 10,000 operating hours or if increased noise, vibrations, or other symptoms indicating a possible malfunction are observed.

Before performing the vibration measurement, remove the rear cover by unscrewing the mounting bolts. Allow the device to operate for at least **15 minutes** to stabilise its operating parameters, assuming that the fan is supplied with **electric current of the rated voltage**, frequency, and the correct **number of phases**. Perform the vibration measurement while the device is running.

8.4.1. DIRECTIONS AND PLACE OF MEASURING VIBRATIONS

The vibration measurement must be conducted in two mutually perpendicular directions on the motor housing at each bearing location, and in one direction perpendicular to the others. Specifically, one direction must be parallel to the shaft's axis of rotation, while the other two directions should lie in a plane perpendicular to that axis.

Measurements perpendicular to the axis of rotation should be performed in the planes of the lower and upper motor bearings, in two or three mutually intersecting directions. It should be noted that the measurement in the upper bearing plane must be carried out on the motor housing; therefore, if possible, any non-rigid motor covers should be removed before measurement. If removal is not possible, the measurement should be taken just below them.

The vibration measurement parallel to the axis of rotation should be performed on the motor flange or on the fan housing directly adjacent to the motor.

8.4.2. VIBRATION LIMITS

The measurement result should be compared with the limit values recommended by **ISO 14694**. The measured vibration value, expressed as velocity **V_{rms}**, should not exceed **V_{rms} = 6.3 mm/s**. Measured values exceeding **V_{rms} = 11.8 mm/s** are considered **alarming**, while values above **V_{rms} = 12.5 mm/s** require an immediate emergency **shutdown** of the device.


<i>Fan status</i>		Flexible mounting		Rigid mounting	
		Peak [mm/s]	RMS [mm/s]	Peak [mm/s]	RMS [mm/s]
Operation	Start-up	↓			
		6,4	4,5	8,8	6,3
	Alarming	↓			
		10,2	7,1	16,5	11,8
Shutdown	Maintenance / Repair				
	12,7	9,0	17,8	12,5	

**8.5. SPARE PARTS**

In the event of wear or damage to any part of the device, please contact the manufacturer, **KLIMAWENT S.A.**

All requests for information, repair work, or inquiries regarding spare parts should be directed to the following address:

KLIMAWENT S.A.
194 Chwaszczyńska St.
81-571 Gdynia, Poland
Tel.: +48 58 629 64 80
Fax: +48 58 629 64 19
e-mail: klimawent@klimawent.com.pl

	Type	Part No	Diameter [mm]	Height [mm]	Weight [kg]	Remarks
	POH186632T	952F134	Ø320	660	4,0	Standard replacement frequency – 1 to 2 years

! INFORMATION

At the customer's request, the manufacturer **KLIMAWENT S.A.** can equip the device with filters made of activated carbon-impregnated non-woven fabric for the additional filtration of gases generated during welding processes. The use of these types of filters increases the absorption of unpleasant odours produced in various technological processes.

8.6. ADDITIONAL EQUIPMENT

Table 7 Standing extraction arms type ERGO LUX

Name	Part No	Size	
		D [mm]	L [mm]
ERGO-L/2-R	910R84	160	2,2
ERGO-L/3-R	910R85		3,0
ERGO-L/4-R	910R86		3,65
ERGO-LL/2-R	909R08		2,2
ERGO-LL/3-R	909R09		3,0
ERGO-LL/4-R	909R10		3,65

! INFORMATION

This user manual does not include operating instructions for ERGO LUX-type extraction arms.



9. WORK DISRUPTIONS, CAUSES, REMEDIES

Table 8 List of Example Faults and Problems

No	Problem	Possible causes	Remedies
1.	The fan does not start.	Tripping of the Q1M switch: Motor overload or short circuit in the motor power supply circuit.	Check the condition of the motor windings.
2.			Check if the motor is not jammed.
3.		No power supply.	Check for voltage at terminals L1, N, and PE of terminal block X1. Correct the power supply parameters.
4.	No airflow or very low fan suction	Clogged suction nozzle or installation.	Check the condition, clean the nozzle and the installation.
5.		Significant contamination of the filters.	Check the condition of the filters. Clean manually or mechanically using equipment designed for this purpose, or replace the filters with new ones.
6.		Sticky or damp dust adhering to the filter surface.	Drain the compressed air tank; check the condition of the compressed air system.
7.			Eliminate the source of moisture or sticky substances entering the intake air.
8.			Limit the temperature of the intake air to +40°C.
9.	No cleaning pulses or reduced pulse intensity	No power supply to the solenoid valve.	Check the connections at the valve and in the electrical switchgear.
10.		Compressed air pressure in the tank is too low due to slow filling from the system or low system pressure.	Adjust the pressure and supply the device with a pressure of 0.6 to 0.8 MPa.
11.	Dust penetration into the discharge system	Perforation or loosening of the cartridge filter mounting, or damage to the compression seal.	Replace the filter with a new one or correct the mounting.
12.		Excessive dust load on the device.	Limit the amount of dust intake by the device.
13.		Dust type not intended for use with the device.	Contact the manufacturer, KLIMAWENT S.A.



10. DISMANTLING, DECOMMISSIONING AND DISPOSAL

10.1. DISASSEMBLY AND DECOMMISSIONING

At the end of its service life, when the device is being decommissioned, it must be dismantled and disassembled in compliance with general Occupational Health and Safety (OHS) and Fire Safety regulations. Particular attention should be paid to internal components and any substances accumulated inside that are potentially hazardous to health. Use personal protective equipment (PPE) as listed in the point. 4.3 – REQUIRED PERSONAL PROTECTION on page 23. Follow the recommendations provided in point 4.2 – SAFETY RULES AND APPLICATION LIMITATIONS on page 21.

10.2. DISPOSAL, SCRAPPING AND RECYCLING

! CAUTION



At the time of disposing of the product for scrap, you **MUST COMPLY** with the regulations regarding the decommissioning of machinery and/or waste recycling.

! WEEE



The symbol shown alongside indicates that the product marked with it must not be disposed of as unsorted waste. Such a product must be sent to a separate collection point, where it will undergo recovery and recycling processes. **The WEEE label** is placed on every electrical and electronic device placed on the market in the EU.

Certain components within the **UFO-1000** device must be treated in accordance with the recommendations of Directive 2012/19/EU of the European Parliament on waste electrical and electronic equipment (WEEE).

Such parts **MUST NOT** be thrown into unsorted waste bins, but instead handed over to a dedicated collection point for waste electrical and electronic equipment!

11. TERMS OF WARRANTY

The warranty period is defined in the **Warranty Card** of the device.

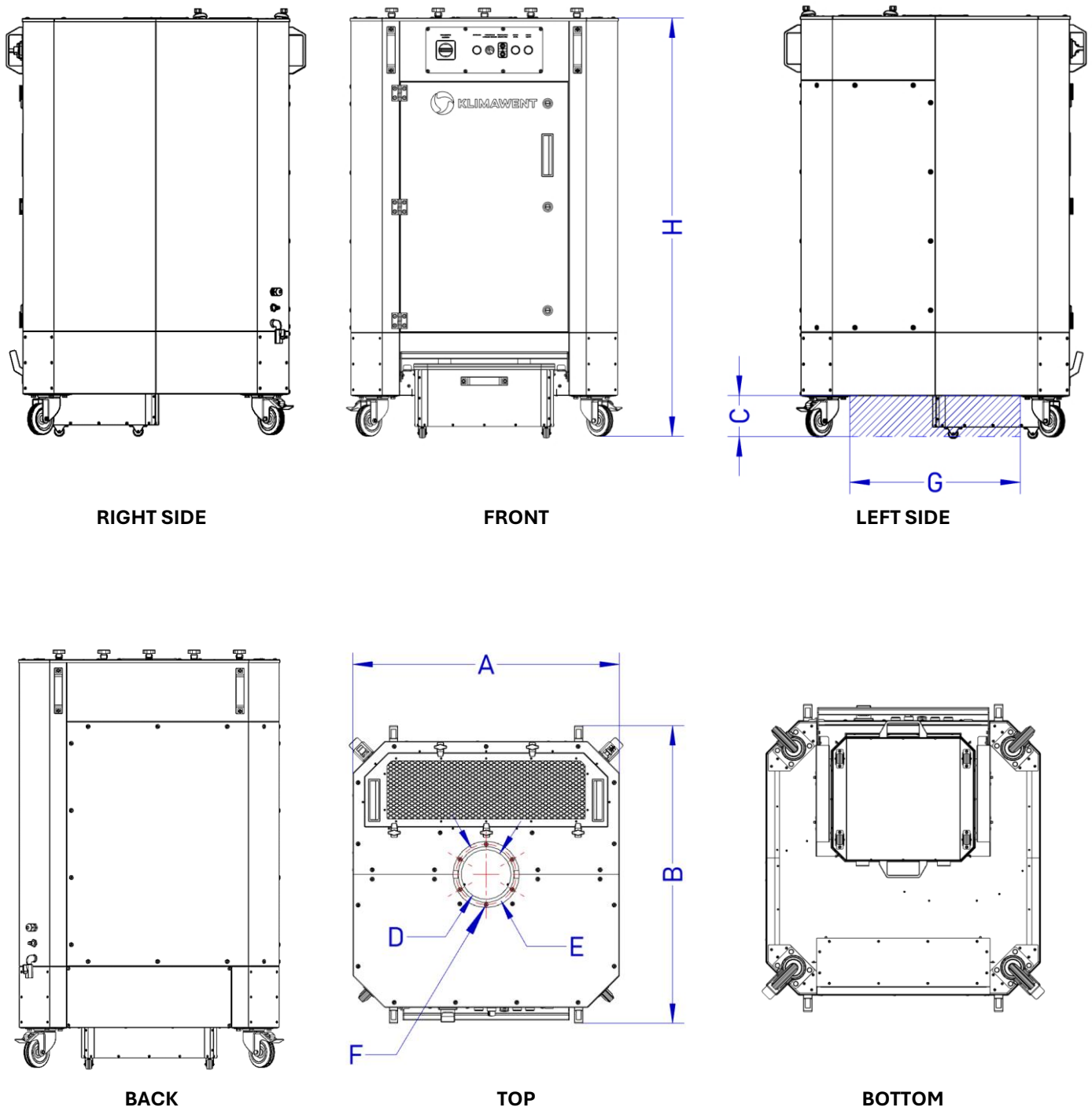
! CAUTION



FAILURE TO FOLLOW the instructions in this manual, especially unauthorised modifications to the device or use for purposes other than its intended purpose, will result in **VOIDANCE OF THE WARRANTY!**

12. DRAWINGS AND SKETCHES

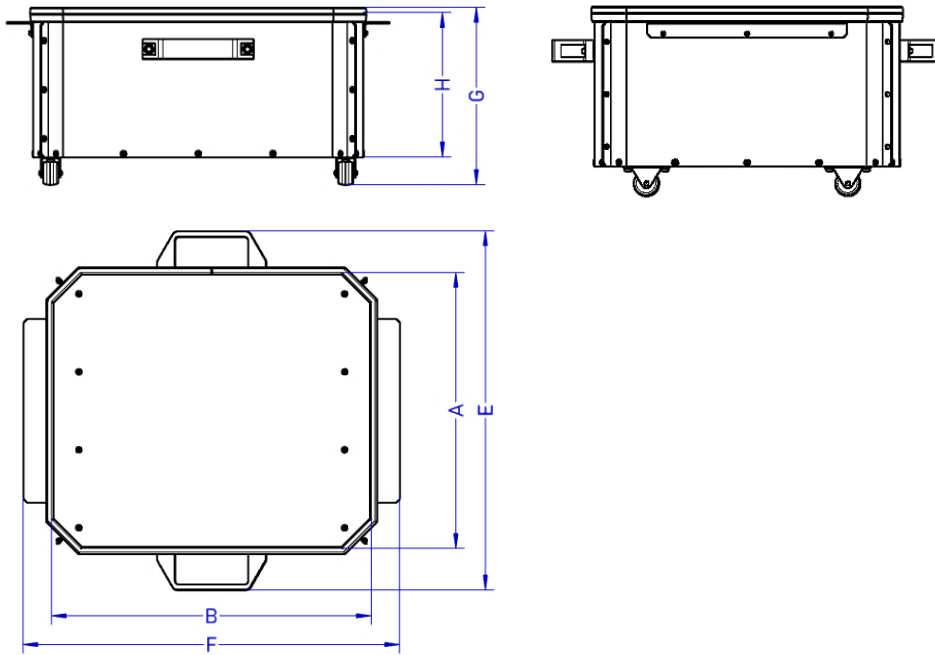
12.1. DIMENSIONAL DRAWING



Picture 28 UFO-1000 mobile version

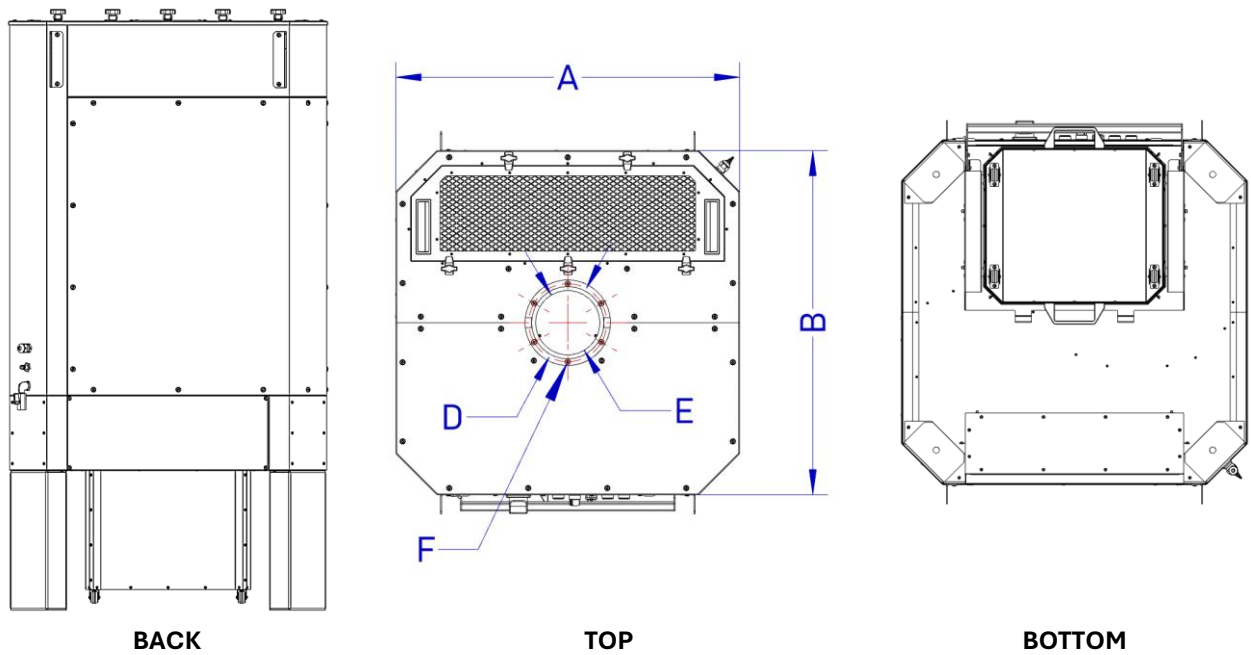
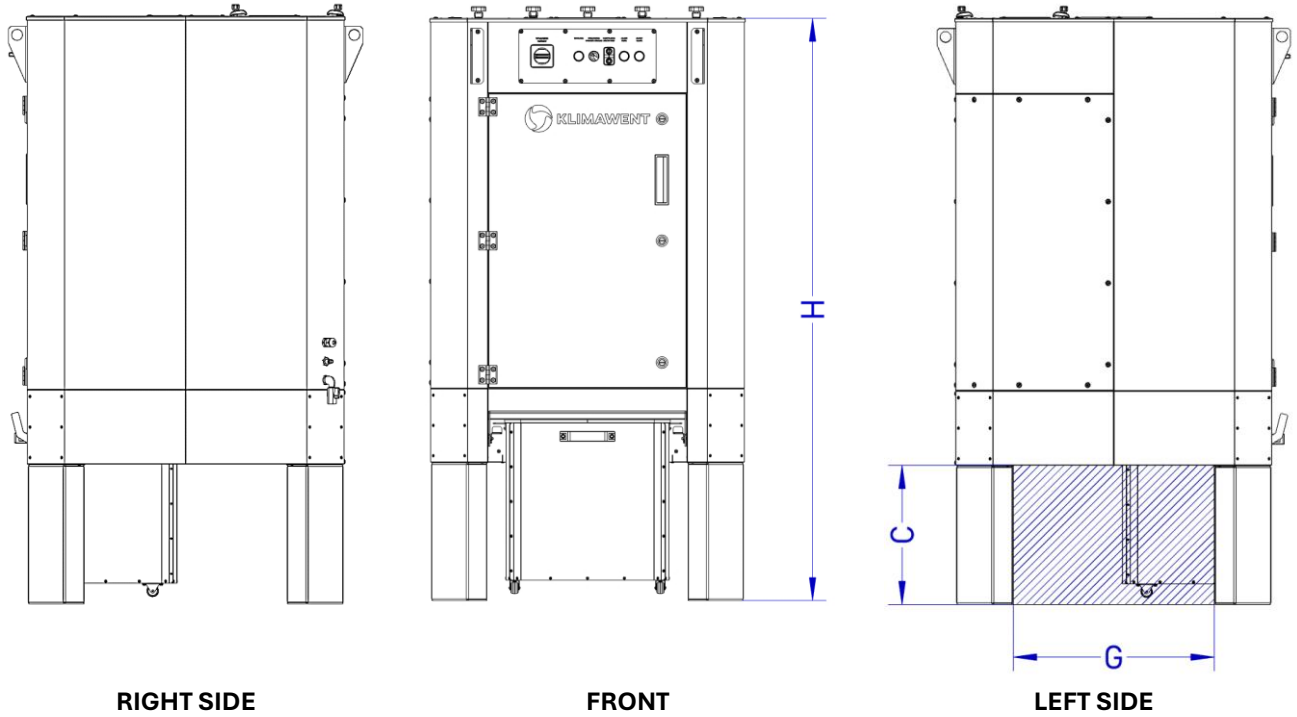
D – mounting socket for the **ERGO LUX-L/R** extraction arm
CG – support point for transport using trolleys or forklifts

A [mm]	B [mm]	H [mm]	D [mm]	E [mm]	F [mm]	C [mm]	G [mm]
855	965	1335	160	194	M6	130	540



Picture 29 Dust container 30 dm³

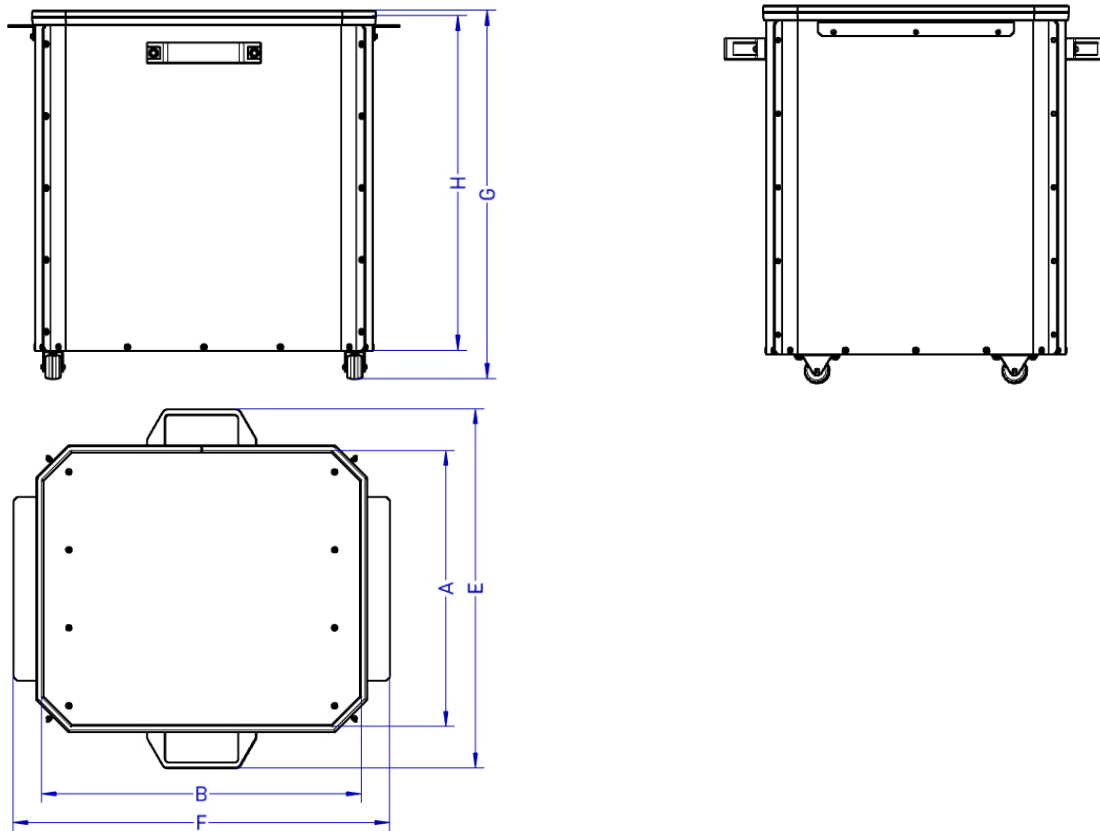
A [mm]	B [mm]	E [mm]	F [mm]	H [mm]	G [mm]
375	435	490	515	190	240



Picture 30 UFO-1000 stationary version

D – mounting socket for the **ERGO LUX-L/R** extraction arm
CG – support point for transport using trolleys or forklifts

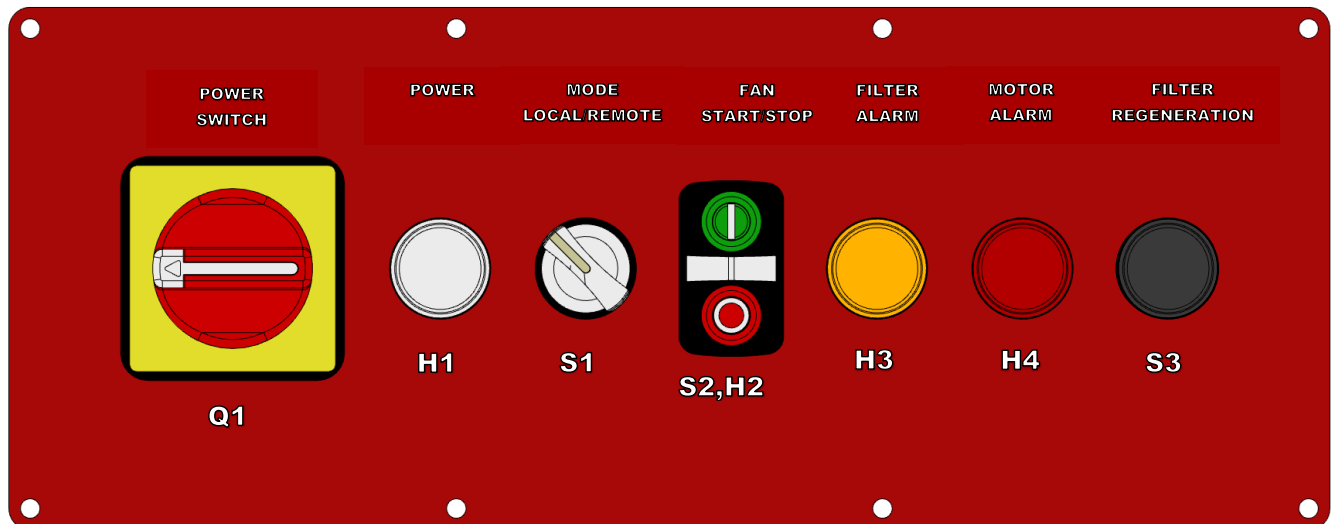
A [mm]	B [mm]	H [mm]	D [mm]	E [mm]	F [mm]	C [mm]	G [mm]
855	855	1580	160	194	M6	375	540



Picture 31 Dust container 70 dm³

A [mm]	B [mm]	E [mm]	F [mm]	H [mm]	G [mm]
375	435	490	515	440	485

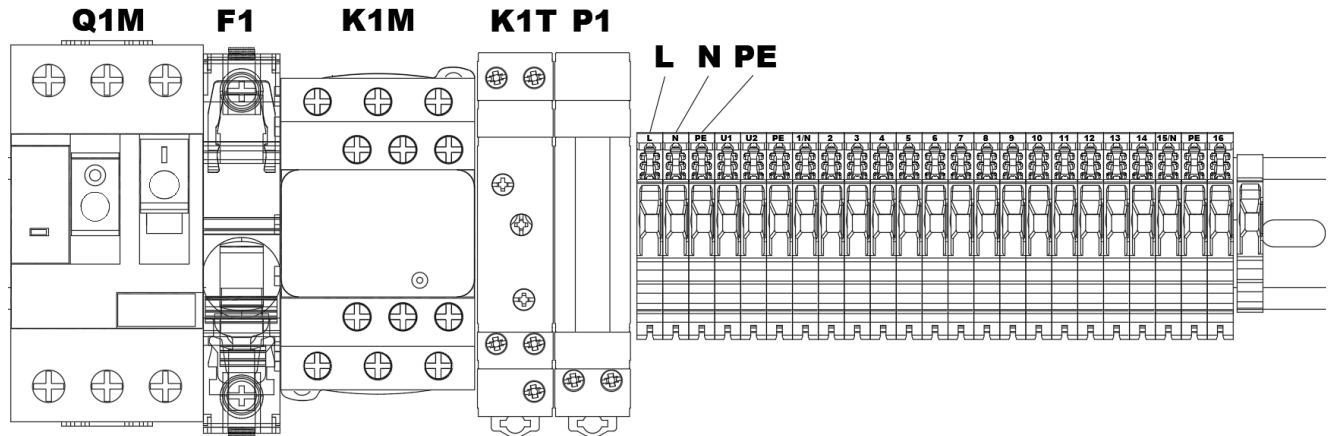
12.2. CONTROL PANEL



Picture 32 Control panel layout

H1 – White lamp indicating voltage in the power supply system; **S1** – Operation mode switch;
S2 – Fan start/stop button; **S3** – Button for manual override of additional filter regeneration;
H2 – White lamp indicating fan operation; **H3** – Orange lamp indicating maximum cartridge filter clogging;
H4 – Red lamp indicating motor alarm; **Q1** – Power supply disconnecter (Main switch)

13.1.1. ELECTRICAL SWITCHGEAR



Picture 33 Electrical cabinet interior view

Table 9 Electrical device functions in the control unit

Device Type ⁹	Specification	Function
Q1	Power switch	Supplies power to the device; this is indicated by lamp H1
Q1M	Motor circuit breaker	Used to protect the motor against damage resulting from stalled startup, overload, or short circuit.
F1	Overcurrent breaker	Protects the control circuit.
K1M	Contactor	Used for fan startup.
K1T	Timer relay	Controls solenoid valve operation.
P1	Hour meter	Records the total operating time of the device.
B1	Cartridge filter pressure switch	Activates indicator lamp H3.

⁹ The electrical diagrams for the device are presented in point. 13 on page 85.





User manual: „UFO-1000 single-station filtration devices”



KLIMAWENT

Po prostu niezawodnie

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