

LIFAair®

NAVODILA ZA UPORABO IN VZDRŽEVANJE



LIFA HepaClean 2500
LIFA HepaClean 4000

EElektrična sesalna naprava s podtlakom (NPU) / čistilec zraku

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POMEMBNO!
Pazljivo preberite ta
navodila pred uporabo
stroja!

Ta navodila morajo biti
vedno dostopna
upravljalavskemu osebju
stroja. Pred uporabo stroja
pazljivo preberite ta
navodila. Dosledno
upoštevanje teh navodil
zagotavlja mnoga leta
nemotene uporabe.

LIFA HepaClean 2500 /4000



Congratulations on your new LIFA HepaClean 2500 or 4000 negative air machine!

LIFA HC2500/HC4000 is designed for filtering/cleaning of airborne pollutants, such as building construction dust, pulverized asbestos, quartz, mill and wood dust etc. that forms in new and renovation of buildings.

- Operates in single phase current, 200-277 VAC, 50/60 Hz (also 100–120 VAC version available).
- Airflow max w/o filters 2500 m³/h, 1470 CFM (HC2500) and 4600 m³/h, 2700 CFM (HC4000), linearly adjustable.
- Robust construction designed for professional use; seamless metal body.
- Negative pressurization of dusty working spaces, or HVAC air ducts.
- Wide range of filters and accessories available.

Note: There is an 8 second delay between switching on the machine and the start of the engine!

Safety Precautions

These safety directions must be carefully observed in order to avoid health problems or direct injury for people and damage to the environment or the equipment itself.

Following these instructions will ensure the safe and uninterrupted use of the machine and accessory equipment.

- Vacuum unit must not be used without a filter.
- The equipment must not be positioned nor used in the areas where there is a risk of explosion, corrosive/acidic substances or other hazardous working methods are used close to the machine.
- The equipment must not get wet and it must be protected from rain, vibration and wind.
- Foreign objects must not be inserted or fitted into the equipment.
- The machine must not be covered during the operation.
- The operator must ensure that both the negative air machine and accessory equipment are suitable and designed for each task/project beforehand and during work at hand, and that local the statutory requirements are fulfilled.

1. Avoid contamination of the environment

The machine should be kept as clean as possible and never transported from any site as dirty unless totally contained until licensed service facility is reached. Never use dirty filter again in different building, or different AHU servicing different duct system within the building. The used filters must be appropriately disposed.

2. General safety

The power must be turned off when the machine is not being used and/or

supervised. Make sure that there is enough lighting in area where the unit and its accessories is placed so that also by-passers can see and avoid all the equipment. The vacuuming unit must never be used with an unprotected suction inlet or exhaust outlet. Any objects that get caught in the fan could be thrown out at high speed and cause injury or damage. It is forbidden to make any modifications to LIFA HC 2500/4000.

3. Operating safety

The person / persons performing the work should always use personal protective

equipment which are fit for purpose (e.g. filtered mouth mask, helmet, earmuffs, goggles, overall, safety boots) in each project.

Never put your hand inside the vacuum unit when power is on. The axial fan has extremely powerful suction. Items (clothing, hair etc.) could easily be sucked into the intake cone and cause injury. It is prohibited to remove protective grating from the suction inlet.

Always use HEPA – or activated carbon filter for gases when needed – inside the main body of the unit when exhaust “waste” air must be blown into building interior. Ensure that the exhaust air is directed to a safe place in all cases where there are no people or materials that could be damaged.

4. Workplace conditions

It is prohibited to use the vacuuming unit for handling of gases which are classified as corrosive, acidic or explosive and/or contain high moisture %. The machine must not be used in any area/space where there is a risk of explosion.

The worksite must have appropriate warning signs and/or barriers in order to prevent entry from unprotected people. Worksite must be well lit and passage to the machine free from obstacles so that the main switch and other controls can easily be seen and reached.

Make sure that there is enough negative pressurization (=suction) within the containment area so that spreading of harmful substances into clean areas nearby is prevented; yet also make sure that there is enough replacement fresh air coming into the work space in which the machine is used and/or people are working.

5. Operating temperature

The temperature of the transferred gas must not exceed 80 °C (175 °F). The machine must not be used in an environment where the temperature exceeds 40 °C (100 °F) or drops below -20 °C (-4 °F).

6. Electrical connection

- Ensure that the voltage supply and the current correspond to the information stated in the CE-plating and the information in these instructions.
- LIFA HC 2500/4000 must be connected to a single-phase current (1~) 200-277 VAC (or 100-120 VAC), 50/60 Hz, 10 A.

Only authorised electrician may do the repairs or installations of the electrical components. In addition, electrician has to be authorised by the manufacturer; otherwise the warranty expires.

Always ensure that the power supply socket is reliably earthed/grounded!

7. Noise level

The noise level of LIFA HC 2500/4000 is relatively low (<70 dB) and it does not depend on the operating environment.

8. Transportation

During transportation and temporary storage the machine must be well locked into its position and protected from moisture and weather. Check all parts before installation and use. Ensure that none of them have been damaged during transport and the fan wheel rotates freely. Please be careful when lifting the vacuuming unit into van, always use both handles on both sides of the unit by 2 men. When lifting into higher elevations with e.g. crane NEVER use the handles only for securing.

General Directions

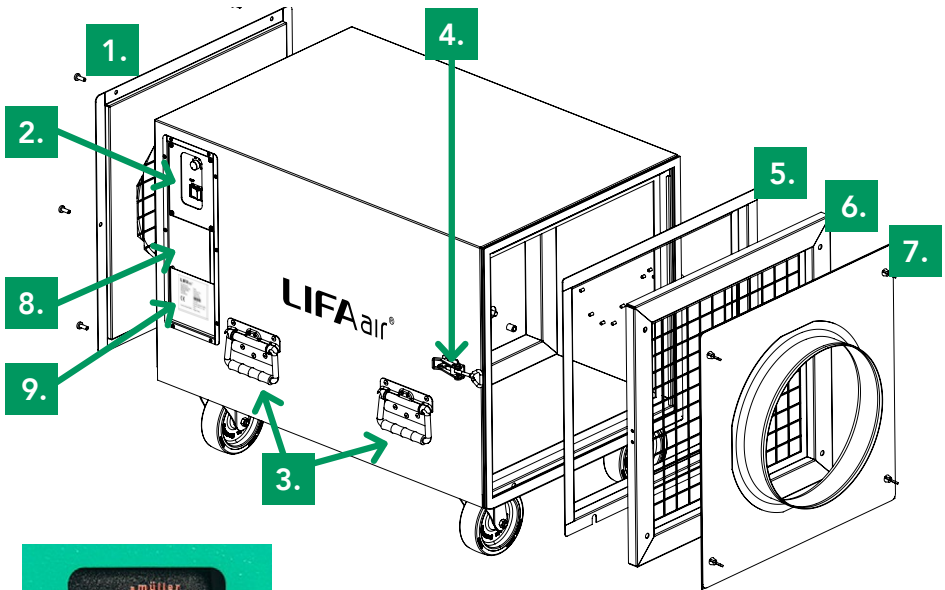
1. LIFA HepaClean 2500/4000 can only be used for the purposes that it is designed for and which are outlined in the instructions. It is forbidden to use the equipment for any other purpose without written permission from the manufacturer. If this equipment is used for a purpose other than in which it is designed for, the manufacturer does not take the responsibility for any consequences.
2. Persons responsible for the work and supervising the use of this equipment must get acquainted with the structure, all functions and the safe use of the accessory equipment. Persons responsible must also know the local statutory working and related equipment requirements and have appropriate training/certifications for any such special requirements.
3. It is prohibited to remove or disable any technical protective/safety device while using the machine.
4. If the operator of the machine estimates that it must be installed in such manner that one of the protective/safety devices needs to be disabled or the device functioning is noticeably improper, work supervisor in charge must immediately be notified of this. Machine must not be used in actual work before the supervisors' approval.
5. Always check that there is both enough negative pressurization and air changes per hour (ACH) in the containment object/space before starting any other work. Below advise table for this. Sometimes there are gaps / holes in the structures that need to be detected with signalling smoke and filled first. Replacement air should be app. 20 % less than exhaust air in order to maintain sufficient negative pressurization.

Recommended air changes per hour vs. space vs. machine to be used:

MACHINE / NPU	DUST CONTROL (air change 5xh)	ASBESTOS / MOLD (HEPA needed) (air change 10xh)
HC1100	Spaces app. 80–130 m ²	App. 45 m ²
HC2500	Enclosure app. 90–180 m ²	App. 100 m ²
AC3500	Enclosure app. 100–300 m ²	App. 120 m ²
HC4000	Enclosure app. 300–500 m ²	App. 150 m ²

Construction and Control

1. Connection stud exhaust side $\varnothing 305$ mm (12")
2. Main switch and other controls for the operation (see picture below)
3. Lifting handles (both sides)
4. Fastening latches (both sides)
5. Frame for bag filters
6. Fastening piece and frame for G4 pre-filter
7. Connection stud suction side $\varnothing 305$ mm (12")
8. Electric cable
9. CE-marking plate / sticker



1. Hour usage meter
2. Filter full warning sign
3. Airflow controller
4. Main switch

Note: there is an 8 second delay between switching on the machine and the start of the engine.

Operating Principles



LIFA HC 2500/4000 can be used with a) bag filter, b) HEPA filter (gasket against back wall, NOT front plate) and c) pre-filter media. When using HEPA and bag filter at the same time, an additional d) pre-filter box for the bag filter must be installed as shown in the picture above.

Installation

Check that the exhaust air can flow unhindered and protect the unit from vibration or blows. Ensure that the suction inlet and exhaust outlet are fitted with their protective grilles, in accordance with the regulations. The maximum permitted operating temperature is 40 °C (100 °F).

Filters

The machine must always be used with at least the pre-filter, which must be installed as shown in picture **C** above. When used as air scrubber only, the suction 305 mm connection stud (No. **8**) can be left away – then changing of prefilter is easy and fast. When suction hose needs to be used, place the pre-filter between the Fastening piece / frame for G4 pre-filter (No. **7**) and the

Connection stud suction side (No. **8**). In addition, LIFA HC2500/4000 can be used with a HEPA/gas and/or a bag filter. For longer lifetime of the HEPA/gas filters, we recommend using either the F7 bag filter or the G4 pre-filter in front. When using all three filter types together at same, additional pre-filter-box (**fig. D**), length 31 cm, 12") is required for the F7 bag filter. The pre-filter-box is placed between the vacuum unit and the parts No. **6**, **7** and **8**, as shown in the picture above. In case a bag filter is not being used, the frame for bag filters (No. **6**) must be removed.

Electrical connection

The vacuuming unit has an EC-motor, which shall be connected to a single-phase (1~) current. The electrical power network must be earthed.

Service and Maintenance

The machine must be unplugged before carrying out maintenance!

Regular service and maintenance:

- **Filter exchange**

Filters must be replaced **when the filter full light is red**. This can be seen from the differential pressure gauge. The person replacing the filter must wear personal protective equipment. Old filter can be disposed of as mixed waste or as hazardous waste (asbestos and other hazardous materials).

- **Machine cleaning**

The body and the ends of the machine must be cleaned thoroughly after every use for example by sweeping with a damp cloth.

If there is a possibility that the filter contains asbestos or other hazardous materials, it must be replaced according to the guidelines for working with asbestos or according to the legislative guidelines regarding the handling of hazardous materials. Also the body and the ends have to be cleaned after operating the machine.

Please note that **the machine must be cleaned of asbestos and/or other hazardous materials inside and outside - and NO used filters** when sending it to the manufacturer or a servicer authorized by manufacturer for maintenance.

Fans are equipped with fully closed ball bearings that do not need lubricating. Fan units are maintenance-free.

Only an authorized electrician, who is also authorized by the manufacturer, may carry out the electrical maintenance.

NOTE!

Possible repairs must be carried out by the manufacturer or a servicer authorized by Lifa Air Oy Ltd. Third party repairs will void the warranty.

Technical Data

LIFA HepaClean 2500/4000

Operating power:	Electricity
Operating voltage:	200-277 VAC (100-120 VAC also available), 1~
Frequency:	50/60 Hz
Motor:	HC2500: 0,5 kW / 2,5-1,8 A, EC-motor HC4000: 1,35 kW / 6,8-4,9 A, EC-motor
Electric cable:	3G1.5 mm ² , length 3 m (10 ft)
Controls box:	Main switch (8 sec delay in starting), air flow adjustment, filter full warning light, hour usage meter
Hose connection stud:	Suction: Ø305 mm (12"), Exhaust: Ø305 mm (12")
Dimensions:	HC2500: HC4000:
Length:	960 mm (37.8") 1030 mm (40.6")
Height:	650 mm (25.6") 800 mm (31.5")
Width:	540 mm (21.3") 700 mm (27.6")
Weight:	HC2500: 57 kg (126 lbs) HC4000: 88 kg (194 lbs), 100-120 VAC version: 96 kg (212 lbs)
Material	Painted steel

CE-marking plate is situated below the main switch. Plugging in, maintenance and spare part supply must be done in accordance with the information given in this plate.

Spare parts and accessories

By using original LIFA accessories you ensure the best performance and long operating life of the machine. Please inform the model of the machine (HC 2500/HC4000) and serial number from the CE-marking plate when ordering spare parts and accessories.

Item number	LIFA HepaClean 2500	LIFA HepaClean 4000
6420281010835	HEPA-filter H13, size 450x450x292 mm (18"x18"x11"), HC2500	-
6420281020902	-	HEPA-filter H13, size 610x610x292 mm (24"x24"x11"), HC4000
37450450300	F7-bag filter, 5 pockets+plastic frame, size 450x450x300 mm (18"x18"x12"), HC2500	-
0385G/300	-	F7-bag filter, 6 pockets+plastic frame, size 592x592x300 mm (23"x23"x12"), HC4000
6420281022920	G4 prefilter-media, cut to right size, 5 pcs package, HC2500	-
6420281023156	-	G4 prefilter-media, cut to right size, 5 pcs package, HC4000
6420281021909	Prefilter-box for bag filters, used when HEPA filter is inside the vacuum unit	-
6420281010866	-	Prefilter-box for bag filters, used when HEPA filter is inside the vacuum unit
6420281022333	-	Activated carbon filter (with 200g of carbon), size 592x592x292 mm, must be used with the bag filter frame, HC4000
6420281022081	LIFA dp AirLog™. Pressurization difference monitoring device for building renovation enclosure dust control, wireless and physical memory logging of data.	
6420281021565	Exhaust Hose, clear plastic foil, 480 mm (19") x thickness 0,15 mm and length 70 m (230 ft) / roll, Ø 350 mm (14"), weight 10 kg (22 lbs)	
6420281010941	Vacuum/Suction Duct Hose, Ø 305 mm (12") x length 10 m (33 ft)	
6420281023576	Clamp for Duct Hose, Ø 300 mm (12")	
EU7_01	Bag filter for exhaust side, class F7, Ø 480 mm, length 1,5 m, used for preventing exhaust air blowing effect and/or noise reducing/dampering	
6420281021053	Gravitational / cyclone filter unit 120 l, for Grease Removal Concept and when extensive amounts of dirt needs to be removed before filters in negative air machine (incl. T-joint + 2 x 5 m flex ducts + 2 x Clamp for Duct Hose 305 mm + 2 x adapter 300 ->315 mm)	
6420281012716	Telescope lifting set (Tripod legs 3 pieces + special clamp) for 305 mm suction hose, each pole consists of 4 pieces (length min-max 1,3-4,25 m)	

Warranty

The warranty period is one (1) year starting from the date of purchase and is valid according to the regular terms of delivery, provided that these operational and maintenance instructions have been carefully followed. Using anything other than original LIFA accessories in the equipment will void the warranty.

Repair is free of charge within the warranty period (proof-of-purchase / receipt must be presented) under the following conditions:

- The defect is caused by defects in materials or defective components.
- Defects caused by normal wear and tear, misuse or insufficient maintenance are NOT covered by the warranty.
- Any maintenance and repairs must be carried out by the manufacturer or by an authorized representative of the manufacturer. Manufacturer does not take responsibility for maintenance carried out by a third party.
- A written reclamation form has to be filled in and sent with descriptive photos to the manufacturer.

The appliance shall be delivered to the authorized Lifa Air Oy Ltd representative from which machine has been bought or when agreed beforehand mutually in writing, to the manufacturer postage paid to:

Lifa Air Oy Ltd
Vellamonkatu 30 B
FI-00550 Helsinki
FINLAND

Tel. +358 9 3948 58
Email: sales@lifa.net

Please note that the machine must be **cleaned of asbestos and/or other hazardous materials before** sending it to the manufacturer or a servicer authorized by manufacturer for maintenance. In case the machine has not been cleaned appropriately, Lifa Air Oy Ltd will charge the customer for the cleaning of the machine.

Lifa Air Oy Ltd reserves the right to introduce changes without a further notice.

Recycling

The machine can always be returned to the LIFA Air authorized representative from which the buyer has bought the machine from, or to the address given before shipping paid (DDP) in case there is no recycling facility where the owner lives.

- Metal parts (frame/body) can be recycled as metal scrap.
- Electrical parts (main switch box, fan motor, transformer) should be returned to an authorized recycling depot.
- Filters that may possibly contain asbestos or other hazardous materials must be appropriately disposed of as hazardous waste. Other filters can be recycled as mixed waste.
- Other parts can be recycled as mixed normal waste.

Declaration of Conformity

Manufacturer's name: Lifa Air Oy Ltd
Manufacturer's address: Vellamonkatu 30 B,
FI-00550 Helsinki, Finland
Manufacturer's telephone: +358 9 3948 58
Manufacturer's website: www.lifa-air.com / www.lifa.net
Model: LIFA HepaClean 2500 /
LIFA HepaClean 4000

Lifa Air Oy Ltd is ISO 9001 and ISO 14001 Certified.

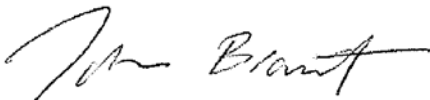
Lifa Air Oy Ltd, hereby states, with sole responsibility, that the machine models covered by this announcement comply with the requirements of the following EC directives and standards:

- EU Machinery Directive MD 2006/42/EC
- EU Low Voltage Directive LVD 2006/95/EC
- EU Electromagnetic Compatibility Directive EMC 2004/108/EC
- EU Directive on the restriction of the use of certain hazardous substances in electrical and electronic equipment RoHS 2011/65/EC

- EN ISO 12100:2010 Safety of machinery
- EN 60204-1:2007 Safety of machinery. Electrical equipment of machines. General requirements.

The product fulfils requirements for CE-marking.

Lifa Air Oy Ltd 10.01.2018



Johan Brandt, CEO

LIFA Air Product Family

	HepaClean 1100	HepaClean 2500	AirClean 3500	HepaClean 4000
Airflow max, w/o filter (m3/h)	1200 (710 CFM)	2500 (1470 CFM)	3600 (2120 CFM)	4600 (2700 CFM)
HEPA 13 (m3/h)	700 (410 CFM)	1800 (1100 CFM)	2900 (1700 CFM)	3200 (1880 CFM)
F7 bag filter (m3/h)	850 (500 CFM)	2100 (1236 CFM)	3100 (1900 CFM)	3500 (2060 CFM)
Static pressure	840 Pa (3,4 iwg)	840 Pa (3,4 iwg)	960 Pa (3,85 iwg)	1000 Pa (4,0 iwg)
Operating Voltage	200-240 VAC, 1~ 50/60 Hz	200-277 VAC (or 100-120 VAC), 1~ 50/60 Hz	200-277 VAC (or 100-120 VAC), 1~ 50/60 Hz	200-277 VAC (or 100-120 VAC), 1~ 50/60 Hz
EC-motor power	0,17 kW / 1,5-1,25 A	0,5 kW / 2,5-1,8 A	0,78 kW / 3,9-2,8 A	1,35 kW / 6,8-4,9 A
Electric cable	3 m (10 ft)	3 m (10 ft)	3 m (10 ft)	3 m (10 ft)
Measurements (mm)	L665 (26.2"), H410 (16.1"), W380 (15")	L960 (37.8"), H650 (25.6"), W540 (21.3")	L960 (37.8"), H650 (25.6"), W540 (21.3")	L1030 (40.6"), H800 (31.5"), W700 (27.6")
Weight (w/o filters)	18 kg (40 lbs)	57 kg (126 lbs)	57 kg (126 lbs), (100-120 VAC version: 65 kg, 143 lbs)	88 kg (194 lbs) (100-120 VAC version: 96 kg, 212 lbs)
Material	Painted steel	Painted steel	Painted steel	Painted steel
Readily assembled	Lifting handle, connection studs: Ø254mm (10") in, Ø305mm (12") out	Lockable wheels, lifting handles, connection studs: Ø305mm (12") in, Ø305mm (12") out	Lockable wheels, lifting handles, connection studs: Ø305mm (12") in, Ø305mm (12") out	Lockable wheels, lifting handles, connection studs: Ø305mm (12") in, Ø305mm (12") out
Machine's equipment	Linear airflow control, filter full warning signal, hour usage counter	Linear airflow control, filter full warning signal, hour usage counter	Linear airflow control, filter full warning signal, hour usage counter	Linear airflow control, filter full warning signal, hour usage counter

LIFAair®

Lifa Air Oy Ltd

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These instructions should always be available for the personnel operating the machine.
Please read these instructions carefully before operating the machine.
Following these instructions in detail ensures many years of trouble-free use.