airinspace®

HEPA³ Air

Mobile air decontamination unit

USER MANUAL
HEPA³Air

CE

European Low Voltage Directive (LVD) 2014/35/EU
European Electromagnetic Compatibility Directive (EMC) 2014/30/EU

WARNING

We strongly recommend that you fully read these instructions before operating **HEPA³**Air for the first time (see section 2 – Use).

To make it easier for the different users to access more detailed information, this manual is divided into 3 sections:

- **Section 1: general information.**
- **Section 2: end user instructions for use.**
- **section 3: technical information for commissioning, servicing and maintenance personnel.**

CONTENT OF THE PACKAGE

- 1 **HEPA³**Air unit
- 1 HQ filter packaged in sealed protective film.
- 4 HEPA filters packaged in sealed protective film.
- 1 Remote control unit.
- 1 Power supply cable.
- 1 Stand with steerable wheels (optional).

    NOTA **:**   The user manual is available on the USB key supplied with the administrative documents or given by **airinspace**® personnel if they are in charge of putting the device into service.

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SECTION 1 - **GENERAL INFORMATION**

1.1   SAFETY INSTRUCTIONS

- **READ THESE INSTRUCTIONS THOROUGHLY** and strictly follow the chronological order of installation, start-up and maintenance steps.

- Do not incline the device to an angle of more than 10° from level ground without support. **Caution, risk of tipping over.**

- If stored or transported at low temperatures, wait at least 1 hour before turning on the equipment.

- The device must be used at temperatures from +5°C to +35°C, with relative non-condensing humidity lower than 99%, with dust levels of less than 0.1 mg/m^3.

- Do not allow any liquid to penetrate the device.

- Do not place the device near a heat source.

- Never obstruct or cover the device inlet (upper grille) or outlets (side grilles) during operation.

- When replacing the filters, only use **airinspace®** supplies.

- Disconnect the device's mains socket before opening it. Do not place your hands near the fan before it has come to a complete stop.

- Do not twist, stretch or damage the power supply cable.

- Only connect the device to earthed sockets that meet legal requirements and are inspected periodically.

- Unplug the device when not in use for extended periods.

ATTENTION : BEFORE CARRYING OUT ANY WORK ON AN ELECTRICAL COMPONENT, SWITCH OFF THE DEVICE BY DISCONNECTING IT FROM THE MAINS.

ATTENTION : WORK ON **HEPA³**AIR   (INCLUDING ELECTRICAL CIRCUIT, ELECTRONIC CARDS, FAN) MUST ONLY BE CARRIED OUT BY **airinspace®** MAINTENANCE PERSONNEL OR DULY TRAINED PERSONNEL.

ANY DAMAGE CAUSED BY THE DEVICE TRIPPING OVER OR FAILURE TO RESPECT INSTRUCTIONS FOR USE AND SAFETY RULES ARE THE SOLE RESPONSIBILITY OF THE USER.

1.2   REGULATORY STANDARD

HEPA³Air devices are CE-marked and comply with European regulations:

$$CE$$

European Low Voltage Directive (LVD) 2014/35/EU
European Electromagnetic Compatibility Directive (EMC) 2014/30/EU

1.3   NORMATIVE STANDARDS

- NF EN 61010-1 (2011). Safety requirements for electrical equipment for measurement, control and laboratory use. Part 1: General requirements.

- EN 61326-1 (2013). Electrical equipment for measurement, control and laboratory use - EMC requirements - Part 1: General requirements

- - NF S 90351 (2013). Healthcare establishments - Clean rooms and associated controlled environments. Requirements relating to the control of airborne contamination.

1.4   CLASSIFICATION

|	
Type of protection against electric shocks	**Class I** Earthing for all accessible metallic elements and internal metallic elements.
Level of protection of applied parts against electric shocks	**No applied parts**
Degree of protection against water and solids	**IP 40**
Operating mode	**Continuous service** Operation under normal conditions of an unlimited duration without exceeding operating temperature limits.
Level of safety when used in the presence of flammable anaesthetics mixed with air, oxygen or nitrous oxide	**Device not suitable for use with flammable anaesthetics mixed with air, oxygen, or nitrous oxide.** **HEPA³Air** is not an AP or APG category medical device. It should always be kept more than 25 cm away from a source of flammable anaesthetics mixed with air, oxygen, or nitrous oxide. The user is therefore responsible for positioning **HEPA³Air** accordingly in the room to be treated.
Electromagnetic interference	**EN 61326-1 class B standard for conducted and radiated disturbances.** **HEPA³Air** is suitable for operation in an environment consisting of devices which respect equivalent criteria.

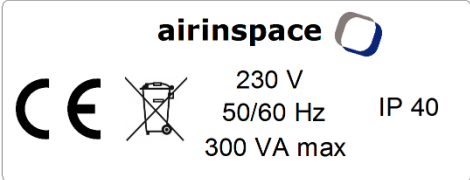## 1.5 DESCRIPTION OF THE DEVICE

1.5.1 OVERVIEW
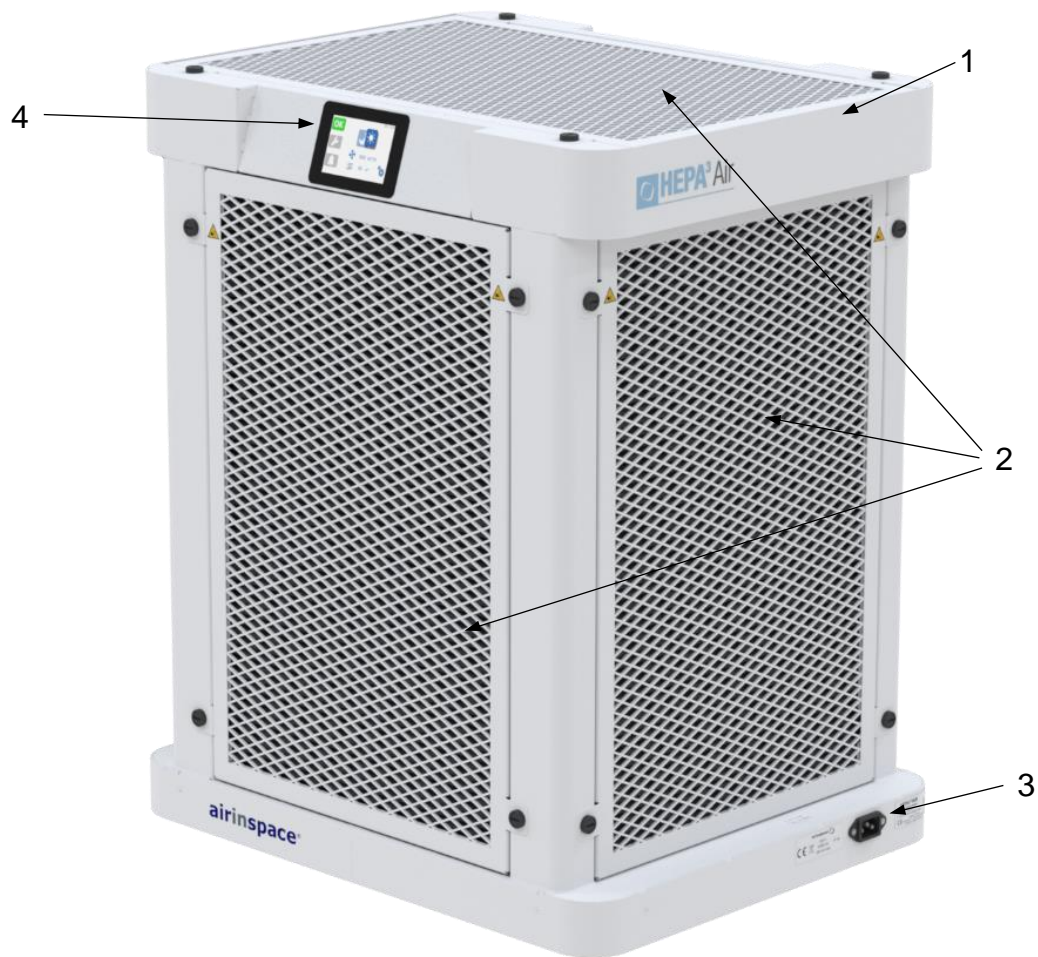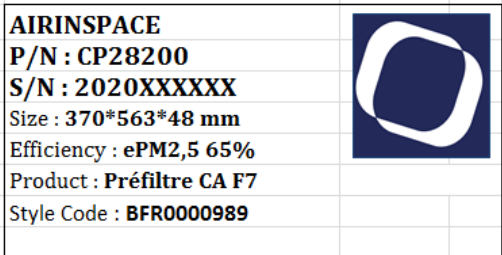
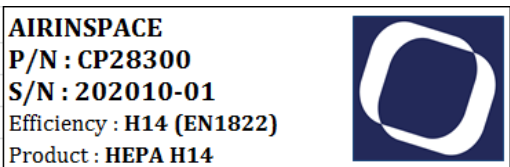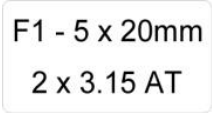| 1	Painted aluminium chassis
2	Removable outlet grille
3	Power supply socket
4	Touch screen control

1.5.2 INTERNAL ACCESS
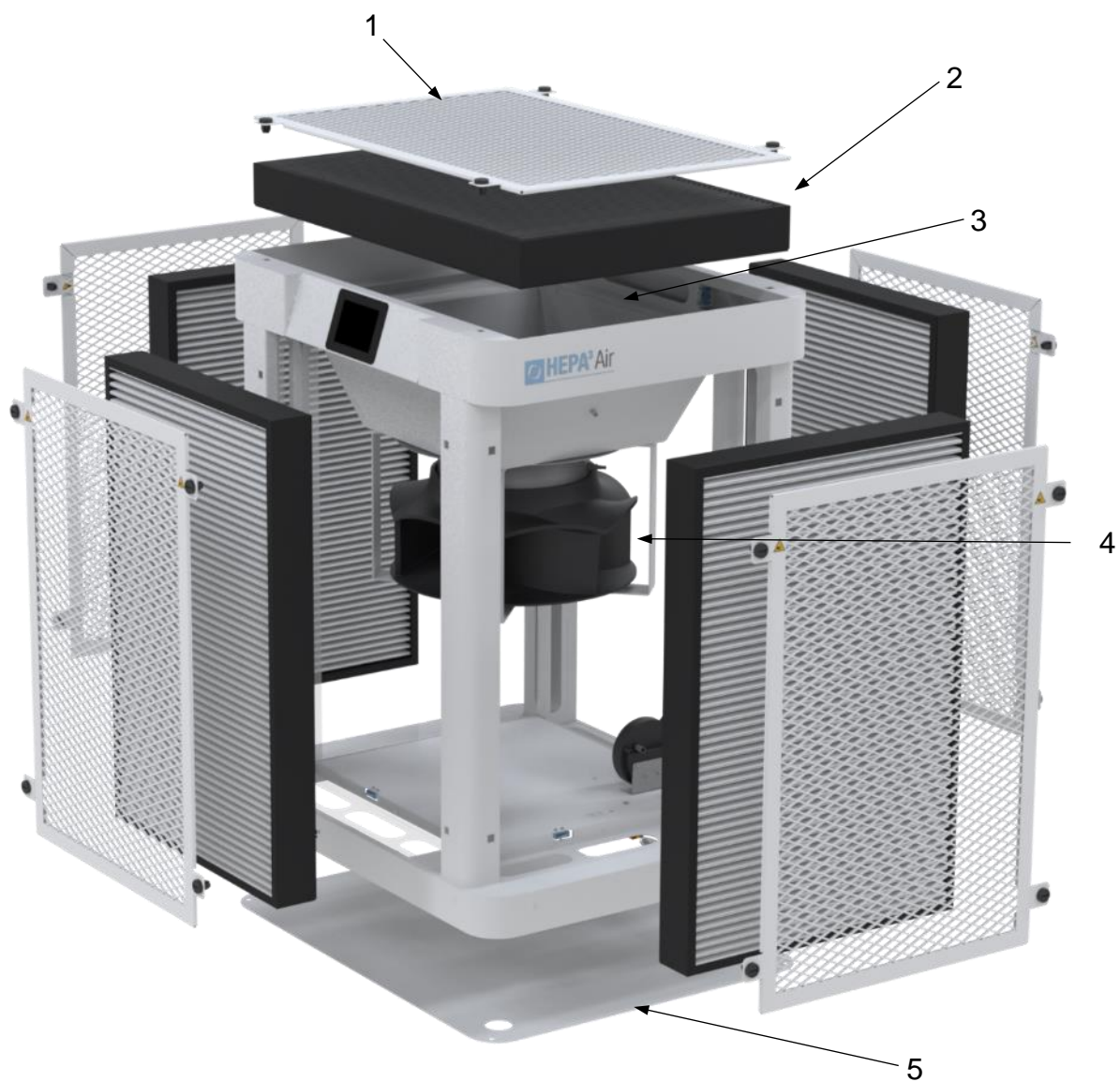
1	Removable outlet grille x 5
2	Prefilter
3	Suction hopper
4	HEPA Filtration modules x 4
5	Fan
6	Electronic components access panel

1.5.3 MARKINGS AND WARNINGS

Label	Description	Position
Product	**HEPA³ AIR** Model: **HEPA CUBAIR** P/N: CP28002 S/N: HEPA CUBAIR- 0001 made in France CE airinspace™ - 14 rue Jean Monnet Elancourt 78990 - FRANCE	On the base of the machine, near the mains socket
Electrical characteristics	**airinspace** CE 230 V 50/60 Hz IP 40 300 VA max	On the base of the machine, near the mains socket
Electrical hazard warning	**DANGER !** Accès réservé maintenance Acces reserved to maintenance	On the electronic components access panel
Earth connection during assembly warning	SERRER / TIGHTEN	Near the Live Earth Neutral terminal block
Prefilters	**AIRINSPACE** **P/N : CP28200** **S/N : 2020XXXXXX** Size : 370*563*48 mm Efficiency : ePM2,5 65% Product : **Préfiltre CA F7** Style Code : **BFR0000989**	On the prefilter
HEPA filters	**AIRINSPACE** **P/N : CP28300** **S/N : 202010-01** Efficiency : **H14 (EN1822)** Product : **HEPA H14**	On the filters
Fuses	F1 - 5 x 20mm 2 x 3.15 AT	Near the fuses
Risk of crushing hands by moving parts		Near removable components giving access to the fan

1.6   FUNCTIONAL DESCRIPTION OF THE DEVICE
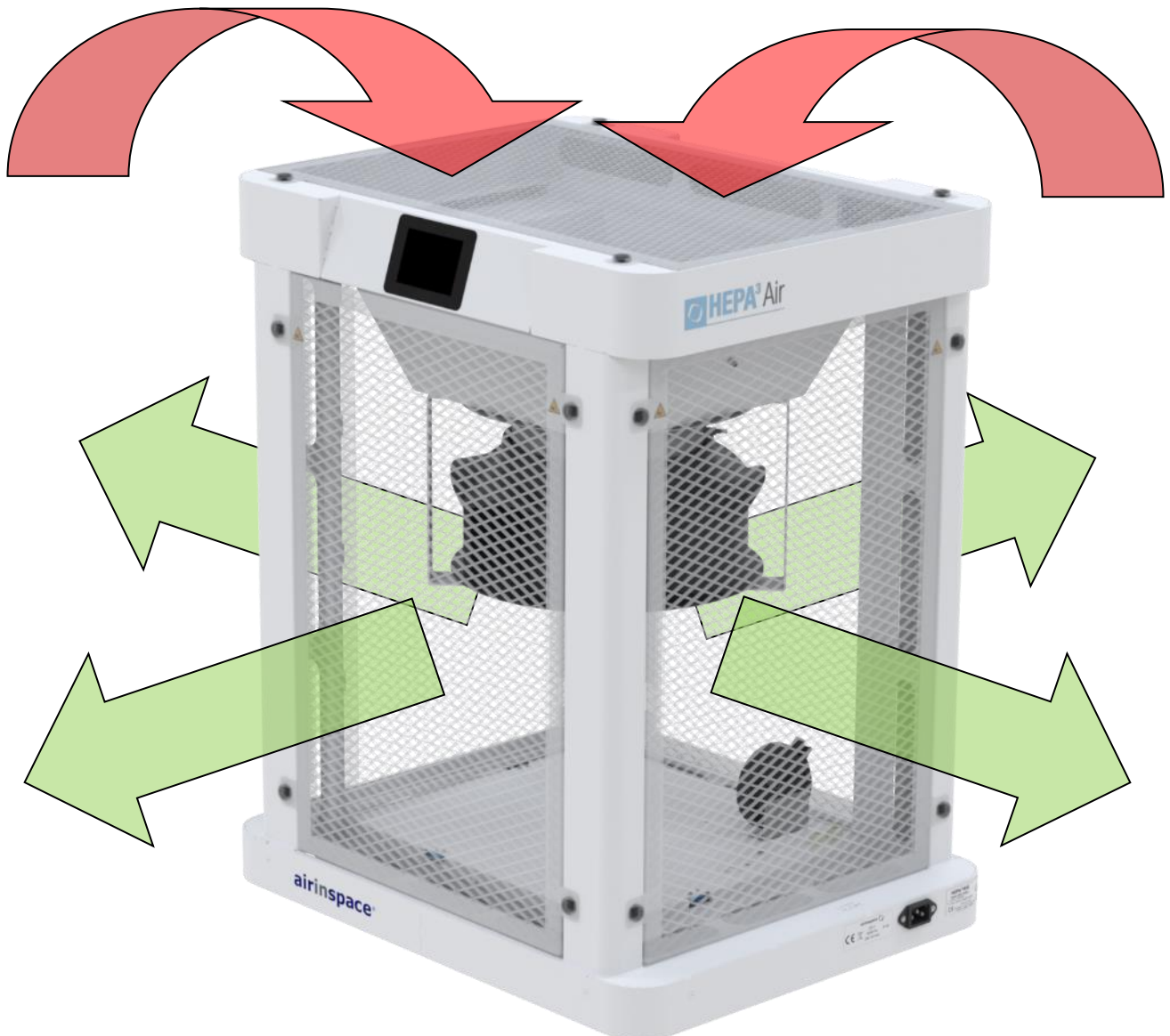
1.6.1 INTENDED USE

The Oxidising Agents **HEPA³**Air is a highly performant mobile air filtration unit. It is dedicated to the removal of microorganisms and particles. It is generally positioned in moderate risk areas such as corridors, airlocks and to protect installations while work is being carried out, for example. It significantly reduces contamination and may constitute an initial air purification stage before air is directed to a higher risk area.

1.6.2 OPERATING PRINCIPLES

HEPA³Air sucks in, treats and recirculates the air in the room. It quickly abates ambient contamination and maintains it at a low level, thus preventing the risk of hospital-acquired infection.

Its important air recycling rate, 10 to 20 folds the room volume per hour, enables a quick abatement of the average contamination level through dilution process. Typically, a pollution peak generated by a door opening is reduced by 90% in less than 10 minutes.

1.6.3 AIRFLOW DIRECTION IN THE **HEPA³**Air UNIT

1.6.4 PHYSICAL CHARACTERISTICS

|	
Electrical supply	~ 230 V; 50/60 Hz
Maximum electrical power	300 VA / 165 W
Electrical power at rated speed (1000 m^3/h)	56 VA / 34 W
Electrical protection	- Isolated by removable power cable - Ph + N FUSES (3.15A)
Volume output	ventilation speeds continually adjustable from 400 m^3/h to 2,400 m^3/h
Device noise level according to standard NF-EN ISO 3744:2012 at 1 m / 2 m (new filters)	- 500 m^3/h 30 dB(A) / 26 dB(A) - 1000 m^3/h 44 dB(A) / 40 dB(A) - 1500 m^3/h 53 dB(A) / 49 dB(A) - 2,000 m^3/h 60 dB(A) / 56 dB(A)
Average velocity of air exiting diffusion grilles	0.70 m/s at 1,000 m^3/h - equivalent outlet surface = 0.39 m^2
Air treatment capacity (room volume)	Potentially all volumes according to desired level of efficiency. 120 m^3 room for an ARH* of 12 vol/h.
Water/solids protection index	Complete device — IP40 Control panel — IP40
Overall dimensions	H 700 x L 590 x D 470 mm
HEPA³Air Weight	kg
Environmental operating range	Temperature — +5 °C to +35 °C Relative humidity — < 95% non-condensing
Environmental storage range	Temperature — 0°C to 45°C Relative humidity — 20% to 90% Dust level — < 1 mg/m^3

NOTA :   The information contained in this table is for information only. For any information on measurements and tolerance intervals, please contact **airinspace**® at the address given at the end of this document.

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* ARH = Air Recycling rate per Hour (e.g. 750 m^3/h in a 100 m^3 room = ARH 7.5 vol/h).

1.7 INSTALLATION INSTRUCTIONS

Reception

1. Remove the unit from its cardboard packaging.

2. Carefully examine the device delivered and check that the items on the packing list are present.

3. Move the unit to where it will be used by means of the gripping areas (1)
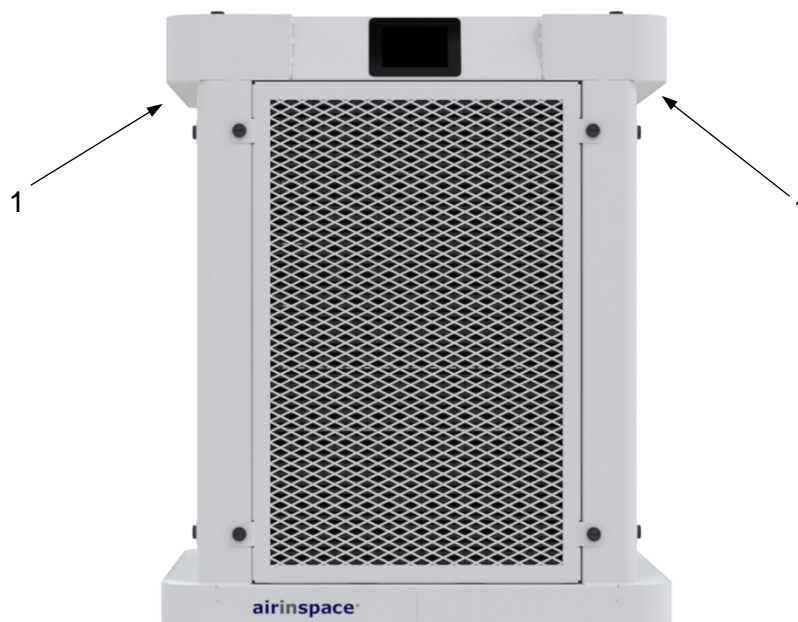
ATTENTION : AS THE UNIT WEIGHS 22KG, TWO PEOPLE ARE NEEDED TO MOVE IT OVER A LONG DISTANCE. AIRINSPACE ALSO PROPOSES AN OPTION TO HELP MOVE THE PRODUCT.

4. Extract the filters by dismantling the removable grilles, then unpack them from their plastic bag

5. Reposition the filters in the **HEPA³**Air unit (see §3.10.1).

6. Connect the unit to a secure electrical socket. (see §1.6.4 – Physical characteristics)

7. Check that the unit starts up correctly (see §2.2 – Start-up).

8. Write down any anomalies and damage on the delivery note and notify the distributor or **airinspace®**. If you wish to contact the manufacturer or distributor, please provide the serial number and date of purchase.

Position in the room

For optimal positioning, the unit must be placed in the centre of the room to be treated.

1.8 INSTRUCTIONS FOR REMOVAL AND STORAGE

1. Switch off the device by disconnecting it from the mains.

2. Place the unit in its original box.

3. Arrange the power supply cable.

4. Move the box to its storage area.

5. The unit must be stored in a clean area with an atmosphere not polluted by industrial activities.

The unit must be protected from dust, direct sunlight, heat sources, frequent changes in temperature and humidity, potentially corrosive chemicals or other products.

Storage temperature	: 0°C to +45°C.
Relative humidity level	: 20% to 90%.
Dust level	: less than 1 mg/m^3.

1.9 TRANSPORT

Before transporting, protect the unit from shocks and scratches.

Transport must be carried out by duly trained and qualified personnel.

Equipment used to handle or lift the unit, alone or in its original box, must comply with applicable legislation (equipment used by the carrier or the user).

During transport, the unit must remain vertical, firmly anchored and kept in an enclosed area (not transported in the open air on a platform, for example).

Follow the instructions regarding the transport box direction: ⬆⬆

1.10 DISPOSAL

This product is covered by European Directive 2012/19/EU of 4 July 2012 on waste electrical and electronic equipment (WEEE) and falls within category 6. "Electrical and electronic tools" as defined in annex I to this directive.

Disposal of this product and the recovery of the resultant waste must respect regulations arising from the application of the European directive by the different member states, as well as any local regulations that complement it.

SECTION 2 - **USE**

2.1   OPERATING PRINCIPLES

The **HEPA³**Air unit has been designed to provide users with a simple and user-friendly interface, regardless of their clearance level. Based on a single software program, it presents different display levels, adapted to everyone's expectations.

2.1.1 USERS AND ACCESS LEVELS

Three levels of intervention are defined for this material:

- N1 level: user.
- N2 level: technician/maintenance.
- N3 level: manufacturer.

 NOTA **:**   Access levels N1 to N3 are protected by access codes.

This manual describes the use of the device for N1 level persons, which involves:

- starting up,
- changing the ventilation speed,
- handling warnings and alerts.

and for N2 level persons, which involves:

- reading the initialisation parameters,
- reading the operating parameters,
- reading the time counters,
- programming ventilation speeds,
- changing the filters.

2.1.2 USER INTERFACES

2.1.2.1 *main screen*

Automatic start activated (see §2.2)   Automatic start deactivated (see §2.2)
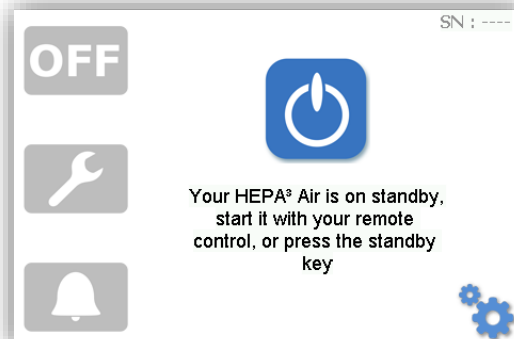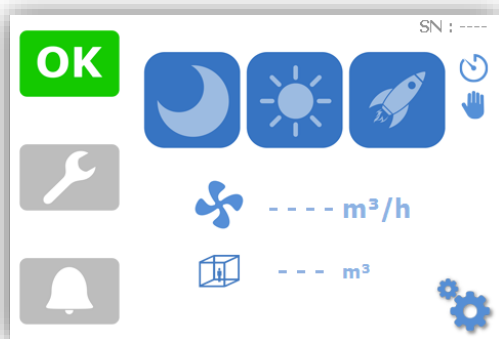
OK	This icon indicates that the device is working correctly
🔧	This icon indicates a warning
🔔	This icon indicates an alert
🌙	This icon indicates ventilation mode: NIGHT
☀	This icon indicates ventilation mode: DAY
🚀	This icon indicates ventilation mode: BOOST
⏻	This icon indicates that the unit is on standby. Start button when automatic start-up is deactivated
⏱	Setup Menu Start Delay
✿ - - - - m³/h ▦ - - - m³	These icons indicate the programmed air flow and room volume
⚙	Setup Menu Access
🕐	Signal that automatic night-time programmer is activated
✋	Signal that manual mode is activated

The **HEPA³**Air unit comes with a remote control used for starting it and putting it on standby.

Press the ▶ button to start up the device at maximum ventilation speed (boost mode) 🚀 .see §2.3 - Changing the ventilation speed.

Press the ■ button to stop ventilation. The device enters standby mode ⏻.

The pairing procedure between a remote control and the **HEPA³**Air unit is described in §3.5.1

2.2   START-UP

Connect the **HEPA³**Air unit to a power outlet ~ 230 V – 50/60 Hz using the 2P+T 10 A power supply cable provided. The screen turns on.

ATTENTION :   THE ELECTRICAL SUPPLY PLUG MUST COMPLY WITH REGULATORY TEXTS AND BE PERIODICALLY CHECKED.

The **HEPA³**Air unit loads the operating programme. The initialisation screen appears (decontamination is not active).

2.2.1 FIRST BOOT

When the **HEPA³**Air unit boots up for the first time, a succession of specific screens appears (called first boot procedure), where the parameters described hereafter must be adjusted. Otherwise, the main screen comes up directly (see §2.2.2).

NOTA :   Validate the current screen and move to the next screen by pressing the ✅ icon. You can return to the previous screen by pressing the ◀ icon.

NOTA :   You can reactivate the display of the first boot procedure in the machine parameters (see §3.7.2). Once this reactivation has been selected, the first boot menu appears when you next restart the unit.
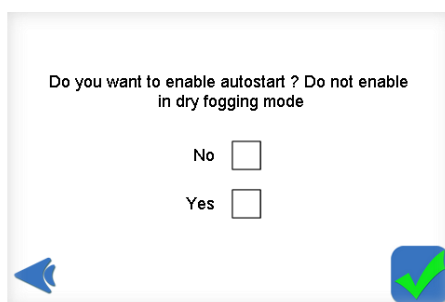
2.2.1.1   *Interface language selection*

2.2.1.2   *Time and date selection*

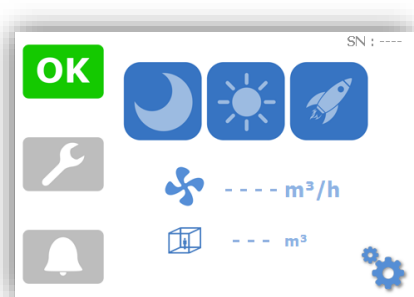2.2.1.3   *Start-up mode selection*

NOTA :   If the automatic start-up mode is activated, when powering up or after a power cut, the **HEPA³Air** unit will (re)start automatically at the last speed used. If the automatic start-up mode is not activated, the machine will switch to standby mode when powering up, the unit will only start at the user's request: by pressing the touch screen or using the remote control.
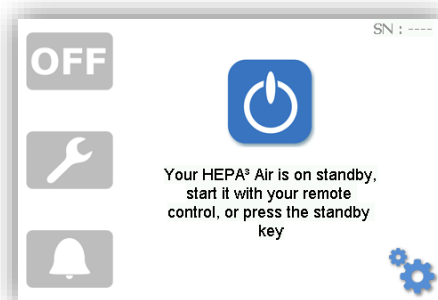
2.2.2 SUBSEQUENT START-UPS

The start-up screen varies depending on the choice made when selecting the start-up mode (see §2.2.1.4).

Automatic start-up activated   Automatic start-up deactivated

NOTA :   If no buttons are pressed, the backlighting of the screen will decrease after 3 min. It will turn off after an additional 30s when in Night mode.

2.3   CHANGING THE VENTILATION SPEED

The HEPA³Air unit is programmed with two ventilation modes (Day/Night) as well as a boost function to provide maximum flow.

To select a mode, simply press the corresponding icon: **START**

Night mode on:

Day mode on:

Boost mode on:

Generally speaking and/or when personnel are present, the device is used in DAY mode.

NIGHT mode is used to reduce the noise level of the device with a view to improving comfort, or when no personnel are within the area of use.

You can set the device to automatically switch from Day to Night mode and vice versa (see §3.6)

NOTA :   During start-up, let the unit run in BOOST mode for at least one hour in the closed room.

NOTA :   When the Boost mode is on, the fan of the HEPA³Air unit runs at maximum speed. The flows displayed may therefore vary depending on the level of dust and clogging in the filters. Maximum flow declines as clogging increases.

2.4   HANDLING WARNINGS AND ALERTS

2.4.1 DEFINITIONS

A **warning** message is displayed when a malfunction leads to degradation of the device's performance (decontamination, pressure drop, sound level) or when a filter needs to be replaced.

NOTA **:**   The warning is indicated by the yellow backlight of the 🔧 button; ventilation still works but filtration performance may deteriorate. The green LED **OK** is no longer on and is replaced with the following pictogram: **...** .
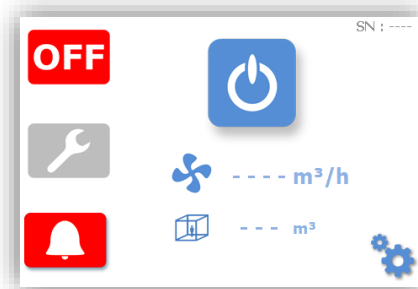
Example:
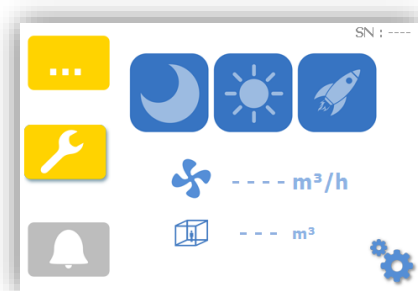
An **alert** message is displayed in the event of a malfunction likely to affect the safety of people or property. An alert systematically causes the fan to shut down. No further filtration function is ensured. The device remains switched on.

NOTA **:**   The alert is indicated by the switching off of the green LED, the lighting of the red LED **OFF** and the red backlight of the 🔔 button.

Example:

2.4.2 PROCESSING

2.4.2.1   *Displaying an alert or warning*

- Press the 🔧 button to display the warning.
- Press the 🔔 button to display the alert.

Example:

- Press the ✓ button to return to the previous screen.

2.4.2.2   *Deleting an alert or warning*

- Disconnect the device.
- Correct the error.
- Reconnect the device.

Example - Filter missing alert:

- Filter not present (or filter incorrectly positioned), the system goes on alert. The device stops, `OK` is replaced with `OFF` and the 🔔 alert LED lights up.
- Display the message by pressing the 🔔 icon. The following screen appears:

- Disconnect the device.
- Clear the error, making sure the filter is correctly positioned in its housing.
- Reconnect the device.
- If there are no other faults or alerts, the machine restarts: the `OK` LED reappears.

    NOTA :   It is possible to simultaneously process multiple warnings and alerts.

2.4.2.3   *Warnings list*

Status area display	Warning definition	Fault condition(s)
[...]	Replacing the filter (Error J)	Time counter 4 years
[wrench]	Replacing the prefilter (Error L)	Time counter 1 year
[bell]	Insufficient flow (Error V)	Flow 30% lower than the setpoint for 5 minutes

2.4.2.4   *List of alerts*

Status area display	Warning definition	Fault condition(s)
OFF	Fan not rotating (Error A)	Fan likely to fail or blocked
[wrench] [bell]	Filter missing or incorrectly positioned alert (Error S)	Miniswitch dry contact open

SECTION 3 - **SOFTWARE MANAGEMENT – CLEANING - MAINTENANCE**

3.1 MENU NAVIGATION

You can browse the settings menu of the **HEPA³**Air unit by pressing the ⚙ setup button from the main screen:

Access to parameters is protected by a password to be entered in the screen. Enter the access code using the keypad and confirm by pressing 'Enter'.

- If the access code entered (by default: "0001") corresponds with level 1 (User level), the following parameter display screen comes up:

🇬🇧	This button allows you to select the language of the user interface: French, English, German, Spanish or Chinese.
⬜	This button is used to set the size of the room and adjust the ventilation speed depending on the air renewal rate.
🔒	This button allows you to set different passwords.
📱	This button allows you to pair the device with a remote control or **RHEA**
🕐	This button is used to enable or disable the automatic switching between DAY and NIGHT modes and to set the corresponding hours.
〰	This button gives you access to the device parameters (read only mode).
💾	This button gives you access to the recorded data of the device.

	This button allows you to return to the previous screen.

- If the access code entered (by default: "1234") corresponds with level 2 (Technician level), the following parameter supervision screen comes up:

This screen is identical to the main screen except for the maintenance button 🔧 which replaces the parameter display button 〰️. This button provides access to the device's settings (editable mode).

NOTA : You can return to the main screen at any time by pressing the Back key ➡️.

3.2   LANGUAGE SETUP

From the maintenance screen, press the language selection button 🇬🇧; the flag changes along with all the text in the user interface. Press this button again to scroll through the different languages: English, German, Spanish, Chinese, French.

3.3   SETTING PROCEDURES FOR ROOM SIZE AND VENTILATION

From the maintenance screen, press the room size and flow setting button 🔲 and the following screen comes up:
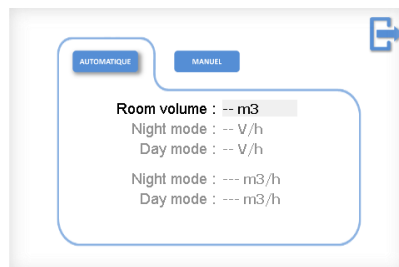
This screen allows you to select one of the two different flow setting modes:

- *Automatic mode* by pressing the key. `AUTOMATIQUE`

The user enters the room size and the device automatically adjusts its flow to guarantee a recycling rate per hour set by default at 20 volumes/h in DAY mode and 15 volumes/h in NIGHT mode.

- *Manual mode* by pressing the key. `MANUEL`

The user enters the desired air flows in m^3/h for the DAY mode and NIGHT mode, or the volume of the room and the renewal rates in DAY and NIGHT modes. The default values displayed are

the last saved values and the ✖ button allows you to delete the information so that you can re-enter it. The minimum ventilation speed must be higher than 400 m^3/h. When the manual

mode is activated the 🖐 icon appears on the main screen (see §2.1.2.1).

3.4   PASSWORD SETTING PROCEDURE

From the maintenance screen, press the password button, 🔒

The following screen appears when level 1 access mode (User) has been selected:
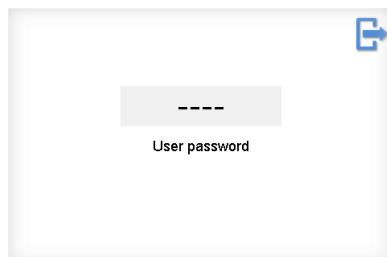
You can then reset the password for level 1 (User, by default "0001").

The following screen appears when level 2 access mode (Technician) has been selected:
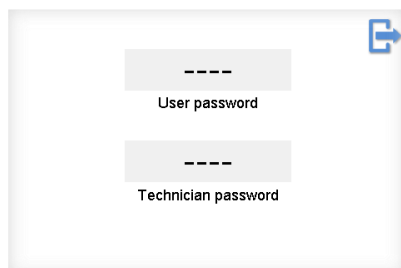
You can then reset the passwords for level 1 (User, by default "0001") and level 2 (Technician, by default "1234").

NOTA :   You can return to the main screen at any time by pressing the Back key ➡ .

3.5   PAIRING PROCEDURES OF THE REMOTE CONTROL

NOTA :   The Radio Frequency module integrated into the **HEPA³**Air unit allows you to pair 10 peripheral devices simultaneously (remote controls and/or other **air**in**space**® units).

After pressing the 📱 pairing key (see §3.1),
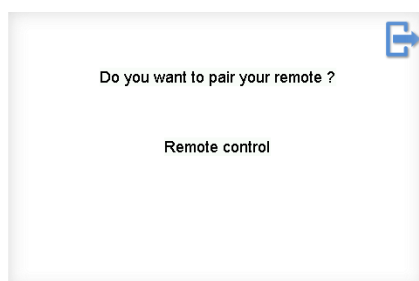
After selecting "Remote Control" (see §3.5), the following screen appears:

Grab your remote and press Start when ready

Start

Press "Start" to initiate the pairing procedure (see next screen). The user has 10 seconds to press a button on the remote control.

Pairing in progress ...

10

Press "Start" button before countdown ends

Cancel
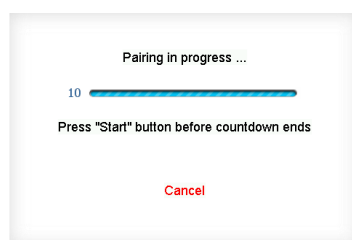
After this 10-second period, the user should check that the pairing is correct. The user must press a button on the remote control again

Press the remote button again to check for proper pairing

10
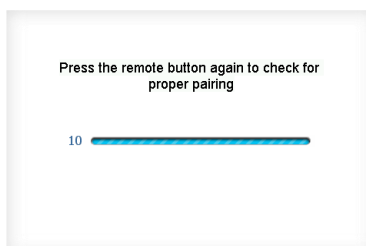
If pairing has been successful, the following screen comes up:

Pairing successful !
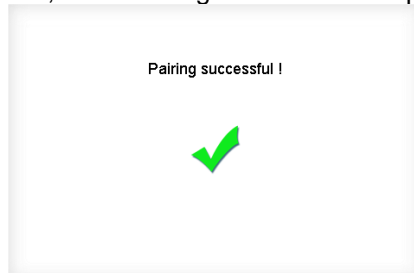
The remote control is now correctly linked to the **HEPA³Air** unit and the procedure is complete.

NOTA : Should the validation screen fail to appear, the procedure must be restarted.

3.6   PROGRAMMER SETTING PROCEDURE

From the maintenance screen, press the programmer button and the following screen appears:
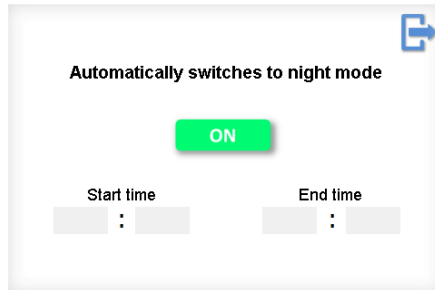
This screen allows you to turn the programmer on or off. If activated, the icon and mode switch times are displayed. The starting and ending hours of the NIGHT mode are editable.

You can disable the automatic switch from DAY to NIGHT mode by pressing the icon; the following screen comes up:
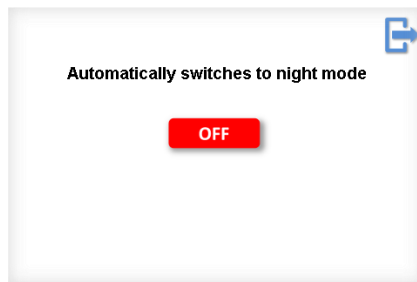
Press the icon to switch back to automatic mode.

When the programmer is activated the icon appears on the main screen (see §2.1.2.1).

3.7 ACCESSING THE PARAMETERS

NOTA **:** The ⬅ and ➡ arrows at the bottom of the screen allow you to scroll through the parameters pages.

3.7.1 IN DISPLAY MODE (LEVEL 1-USER)

From the maintenance screen, press the parameters display button 〰 and the following screen comes up:
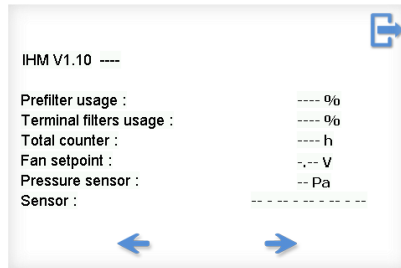
This screen displays the software version of the user interface as well as the operation counter of the filters, the total counter, the fan steering setpoint in Volt, the differential pressure at the fan inlet nozzle in Pascal as well as the status of the sensors:

Suction filter (filter on top of the unit)	**1=0**: Filter positioned
	1=1: Filter missing
First outlet filter (lateral filter)	**2=0**: Filter positioned
	2=1: Filter missing
Second outlet filter (lateral filter)	**3=0**: Filter positioned
	3=1: Filter missing
Third outlet filter (lateral filter)	**4=0**: Filter positioned
	4=1: Filter missing
Fourth outlet filter (lateral filter)	**5=0**: Filter positioned
	5=1: Filter missing

The following screen is used to set the time and date. It is also used to activate or deactivate the automatic start-up (see §2.2.1.4).

3.7.2 IN SUPERVISION MODE (LEVEL 2-TECHNICIAN)

From the maintenance screen, press the parameter supervision button and the following screen appears:
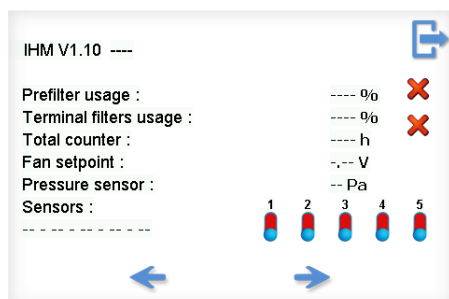
This screen displays the software version of the user interface as well as the operation counter of the filters, the total counter, the fan steering setpoint in Volt, the differential pressure at the fan inlet nozzle in Pascal as well as the status of the sensors (see table §3.7.1 for details). You can also activate or deactivate the different sensors by pressing the button located under the corresponding number.
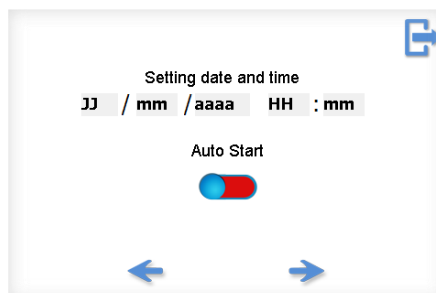
 Sensor activated   Sensor deactivated
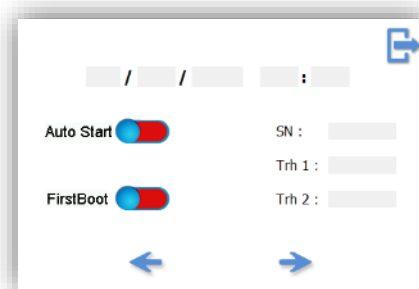
This screen is used to set the time and date and renewal rates per hour for day and night modes. It also allows you to activate/deactivate the automatic start-up (Auto Start), reset the FirstBoot menu and set the operating mode (Standard or DRY FOGGING).

3.8 DISPLAY OF RECORDED DATA

From the maintenance screen, press the datalog button

The following screen comes up:
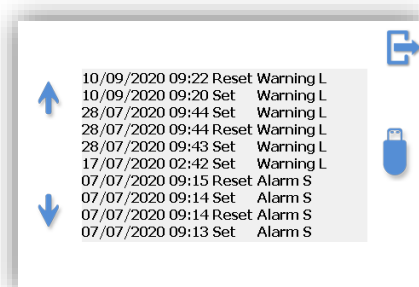
This screen displays the events recorded (alarms or warnings). The operating parameters are also recorded every operating hour.

3.9   MAINTENANCE - BIOCLEANING

We should reiterate that these recommendations are to be compared with the **specific biocleaning frequencies defined by internal staff for the department in which the HEPA³**Air **unit is used.**

airinspace® strongly recommends that users be aware of and, where necessary, increase the frequencies presented herein in accordance with the practices of the department.

NOTA :   The biocleaning protocol follows the recommendations for use of the establishment's infection control service.

3.9.1   MAINTENANCE PRODUCTS COMPATIBLE WITH **airinspace**® equipment

The device is compatible with common disinfectant cleaning products used in hospitals:

- Halogens (chlorinated and iodine products);
- Biguanides (chlorhexidine);
- Alcohol (70° ethanol, 60° isopropyl alcohol);
- Quaternary ammonium compounds (benzalkonium chloride, etc.);
- Oxidising agents (peracetic acid, hydrogen peroxide-based compounds);
- Diamidines (hexamidine);
- Aldehydes;
- Phenolic derivatives, etc.

airinspace® strongly recommends that users verify the choice of disinfectants used, by carefully selecting the biocidal activity standards with which the product must comply (by default, the product is expected to at least comply with the testing standards under standard conditions - phase 1 and in the presence of interfering substances – phase 2.1):

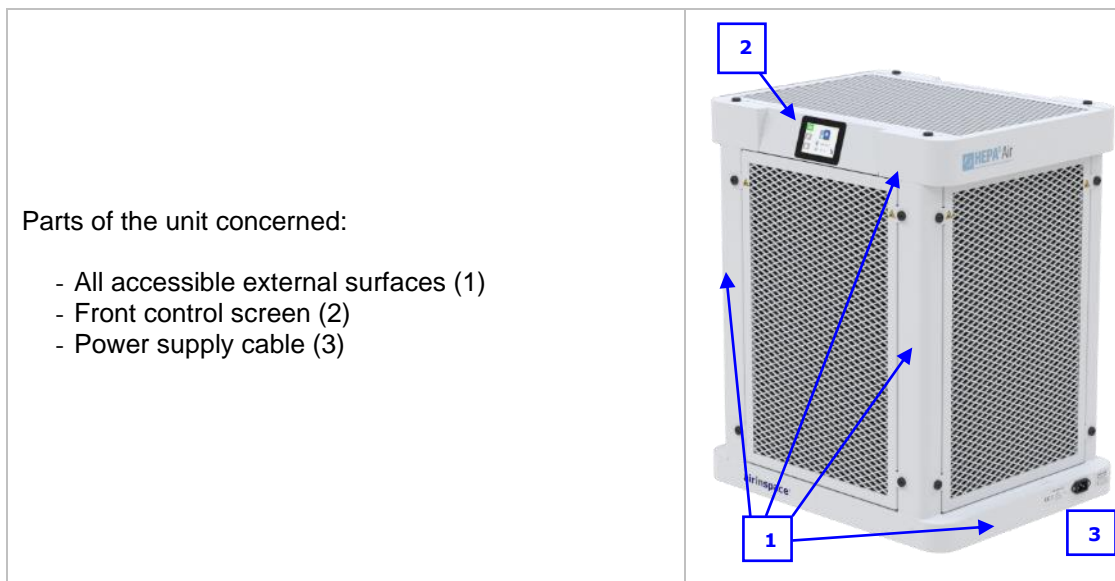| Validation stage	Bactericide	Fungicide	Sporicide	Mycobactericide	Virucide
Standard – phase 1	EN 1040	EN 1275	EN 14347		
Suspension with interfering substances - phase 2.1	EN 1276	EN 13624 EN 1650 +A1	EN 13704	EN 14348	EN 14476 +A1
Areas – phase 2.2	EN 14561 EN 13697	EN 14562 EN 13697		EN 14563	

3.9.2 STANDARD PROCEDURE

By default, the standard disinfection procedure applies to the maintenance of the **HEPA³**Air unit.

3.9.2.1   *Equipment required*

- Single use or recyclable wipes (to be changed after each room)
- **Detergent-Disinfectant (DD) graded as Bactericide – Fungicide – Virucide**, in bucket or spray container
- [Flat-head screwdriver with 6.5 or 8mm tip only for annual maintenance of the unit]

3.9.2.2   *Daily Biocleaning*

Parts of the unit concerned:

- All accessible external surfaces (1)
- Front control screen (2)
- Power supply cable (3)

1. Prepare the equipment required and the **D**etergent **D**isinfectant solution;
2. Using a wipe that has been soaked in **DD** solution, wipe the disinfectant solution over the relevant parts of the device (see table above), preferably working from top to bottom. Make sure you regularly re-soak the wipe with **DD** product if the surface does not appear sufficiently moist.

> **ATTENTION :**   DO NOT SPRAY DD DIRECTLY ONTO THE UNIT. WRING OUT THE WIPE BEFORE APPLICATION.

3. Leave to dry.

> NOTA **:**   If the surface is very dirty, it should be cleaned with a detergent first: dust with a damp cloth, wash with a detergent solution and rinse.

3.9.2.3   *Yearly biocleaning*

ATTENTION : SINCE YEARLY BIOCLEANING OF THE UNIT REQUIRES ACCESS TO INTERNAL PARTS OF THE UNIT, IT MUST BE CARRIED OUT BY DULY AUTHORISED MAINTENANCE PERSONNEL.

BEFORE ACCESSING THE INTERNAL PARTS OF THE **HEPA³**Air UNIT, SWITCH OFF THE DEVICE BY DISCONNECTING THE POWER SUPPLY CABLE AND TAKE ALL NECESSARY PRECAUTIONS TO PREVENT ANY INADVERTENT RESTART.

	Stop the **HEPA³**AIR unit by disconnecting the power cable.
	Remove the 5 removable outlet grilles by releasing the ¼ turn fasteners using the flat-head screwdriver. Remove the 5 filters by pulling them out of their housing.
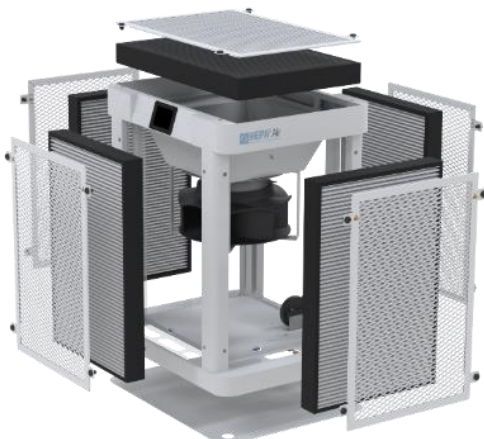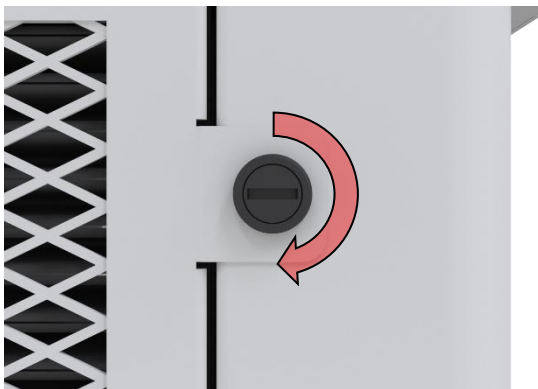
Parts of the unit concerned:

- All accessible external surfaces (1)
- Front control screen (2)
- Power supply cable (3)

- Removable outlet grille (4)

- Suction hopper (5)
- Fan chamber (6)
- Filter housing (7)

1. For parts (1) to (3), apply the daily biocleaning procedure.

2. For part (4), remove the removable outlet grilles. Immerse the outlet grilles in a **DD** bucket for 15 minutes. Leave the grilles to dry and, if necessary, wipe them with a dry, soft, lint-free cloth.

3. Disinfect internal parts (5) to (7).

3.10 MAINTENANCE

ATTENTION : AS PART OF A SERVICE AGREEMENT, MAINTENANCE AND REPAIR OF THE DEVICE DURING ITS LIFETIME ARE THE RESPONSIBILITY OF THE MANUFACTURER OR AN AUTHORISED SERVICE CENTRE.

HOWEVER, CHANGING THE FILTERS AND FUSES IS THE RESPONSIBILITY OF DULY AUTHORISED MAINTENANCE PERSONNEL

To guarantee maximum efficiency at all times, the **HEPA³**Air unit's filters have a limited lifespan managed by a time counter.
When the service life of consumables has expired, a warning message appears on the unit screen indicating that they should be replaced.

3.10.1 REPLACING THE FILTERS

Filters can only be changed by personnel with sufficient knowledge, duly trained and authorised by **airinspace®.**

3.10.1.1   *Tools required:*

- Flat-head screwdriver with 6.5 or 8mm tip.

3.10.1.2   *Recommendations:*

- Keep the new filter in its original packaging until installation. During installation, take every precaution to avoid damaging or soiling the new filter: clean hands, clean storage medium, handle the filter with the outside envelope only.

- Run the **HEPA³**Air unit in BOOST mode (icon on screen:) for 30 minutes following the operation.

- Make sure used filters and associated packaging are disposed of in accordance with the environmental protection rules and special waste regulations in force within the establishment.

- Disposal

The materials making up the filter are polystyrene for the frame, polyurethane for the foam gasket and glass microfibre with synthetic fibre and active charcoal for the filter medium.

This product is covered by European Directive 2012/19/EU of 4 July 2012 on waste electrical and electronic equipment (WEEE) and falls within category 6. "Electrical and electronic tools" as defined in annex I to this directive.

Disposal of this product and the recovery of the resultant waste must respect regulations arising from the application of the European directive by the different member states, as well as any local regulations that complement it.

3.10.1.3 *Removal procedure*

ATTENTION : DANGER! BEFORE WORKING ON THE **HEPA³**Air UNIT, SWITCH OFF THE DEVICE BY DISCONNECTING THE UNIT'S POWER CABLE AND TAKE ALL NECESSARY PRECAUTIONS TO PREVENT ANY INADVERTENT RESTART.
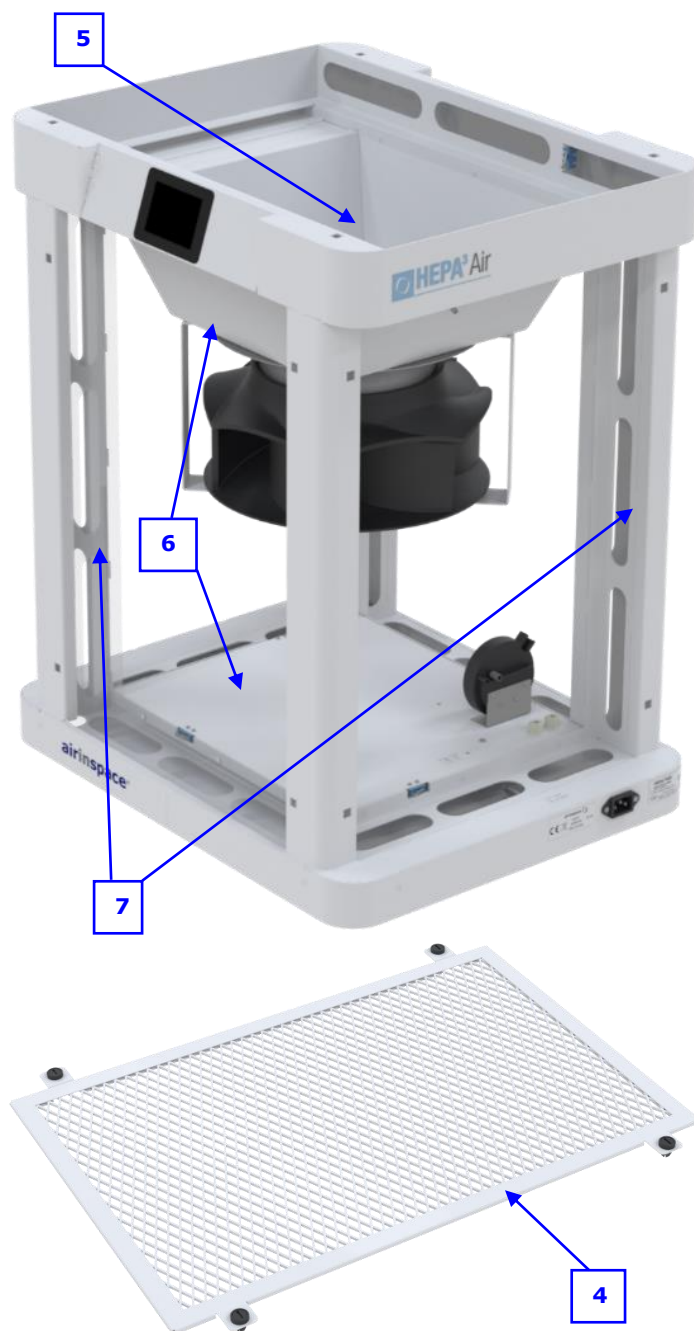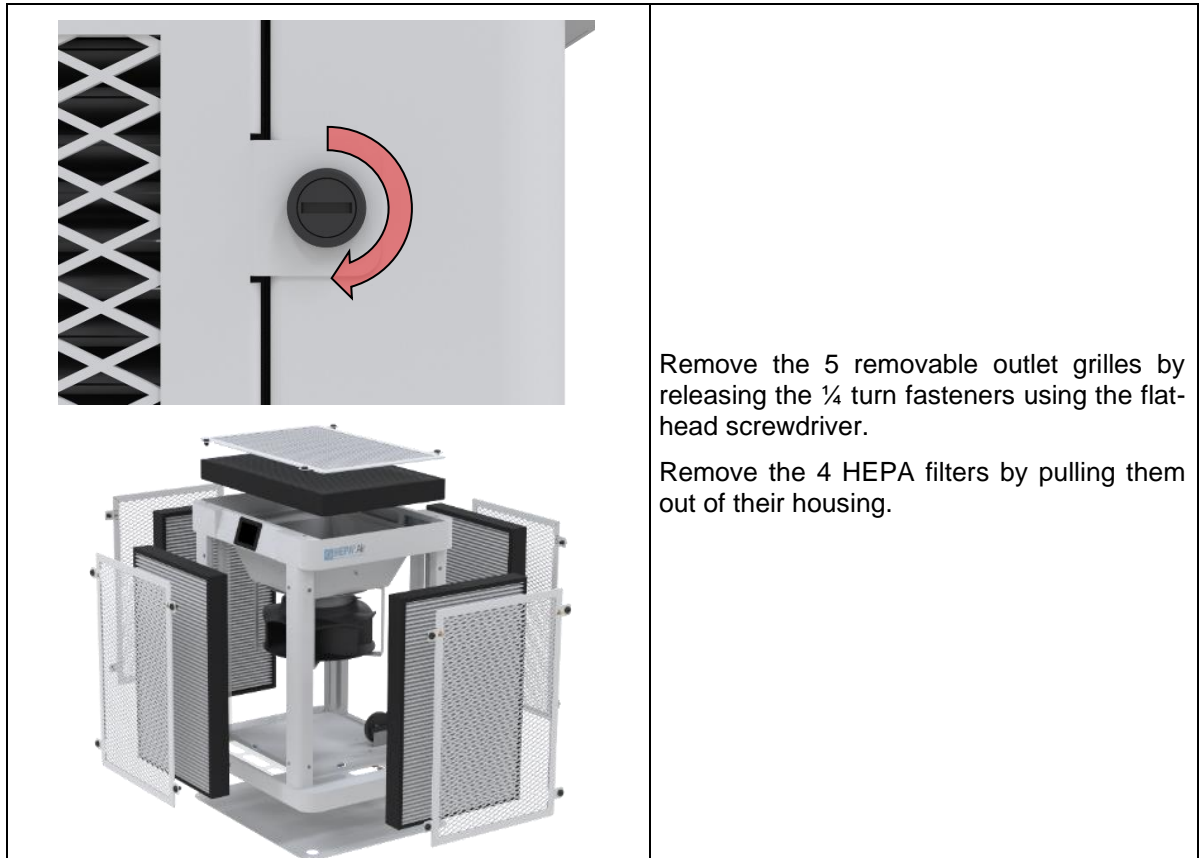
	Remove the 5 removable outlet grilles by releasing the ¼ turn fasteners using the flat-head screwdriver. Remove the 4 HEPA filters by pulling them out of their housing.

3.10.1.4 *Fitting operation*

Carry out the fitting operations in the opposite order to removal and reset the filter counter (see §3.10.3 - Resetting the counter).
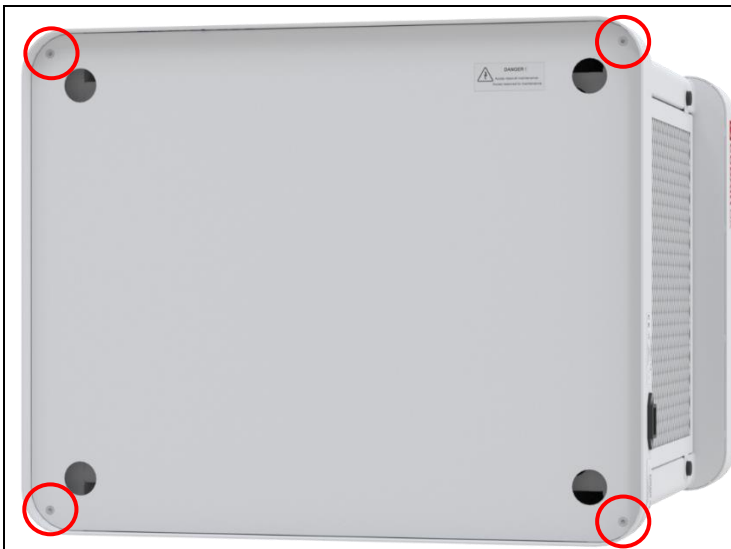
3.10.2 REPLACING A FUSE

Two fuses (3.15A T) protect the elements of the electric circuit. They are located behind the electronic components access panel (marker 5 §1.5.2).
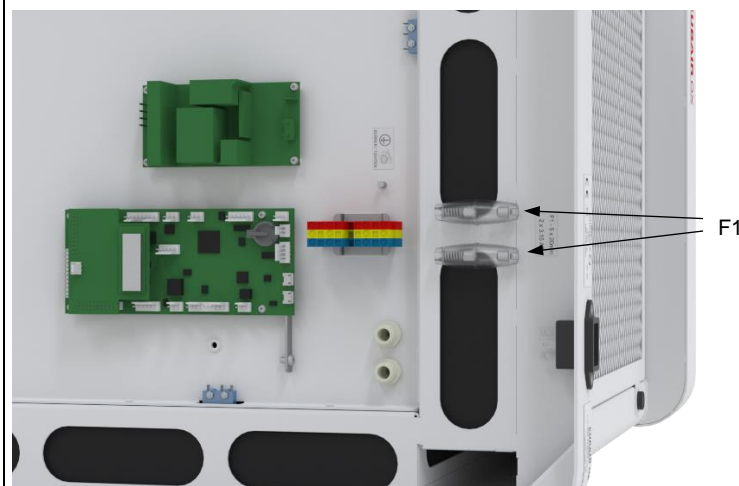
3.10.2.1 *Tools required:*

- A multimeter to measure resistance and voltage.
- 2.5mm hex wrench to remove the access panel.

3.10.2.2 *Fuse Replacement procedure*

	- Lay the **HEPA³**Air unit on its side to clear access to the panel which protects the electronic components. - Remove the 4 screws with the 2.5mm hex wrench.
	F1 fuses access (x2): - Unscrew the fuse holders located near the mains socket and change the fuses.

3.10.3 RESETTING THE COUNTER

3.10.3.1 *Filter replacement frequency*

To guarantee maximum efficiency at all times, the **HEPA³**Air unit's consumable parts (pre-filter and HEPA filters) have a limited lifespan managed by a time counter.
When the service life of the filters has expired, a warning message appears on the unit screen indicating that they should be replaced.

The table below summarizes the maximum lifespan of the different filters:

| Consumables	Max lifespan
Prefilter	1 year
HEPA filters	4 years

3.10.3.2 *Counter reset procedure*

Once the consumable part has been replaced (see §3.10.1), the associated time counter must be reset.

- As the filters are expiring, the machine screen displays the [...] and [🔧] symbols. However, the unit keeps operating and decontamination is still active. Pressing the [🔧] button indicates that the filters should be replaced.
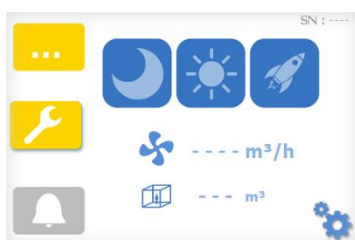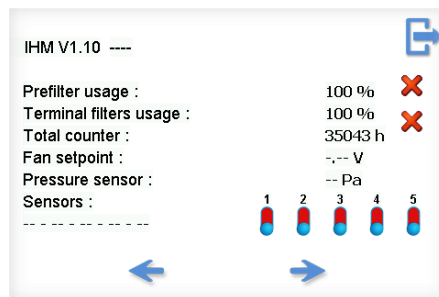

- Check the counter in the settings:
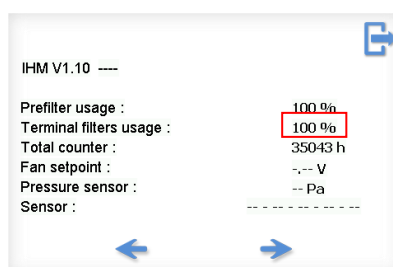
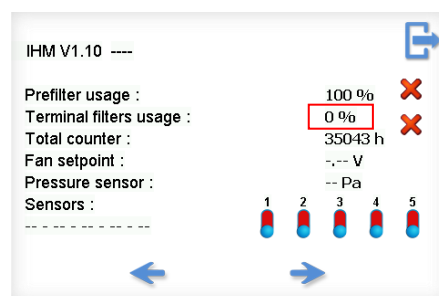

- Replace the filters (see §3.10.1)

- From the maintenance screen (level 2 – technician), press the parameter supervision button (see §3.1).

- Press the filter counter reset icon , and the following screen comes up:


- Confirm by pressing

NOTA: This operating mode is valid for the replacement of the prefilter or the terminal filters. Warning! Prefilter and terminal filters should not necessarily be changed at the same time. Pay attention to reset the counter corresponding to the right filter and check the update in use.

3.11 FUNCTIONAL ELECTRICAL DIAGRAM

| Reference	Description	Description
A	F1 Fuses	F1 Fuses
B	24 VDC power supply	24 VDC power supply
C	Controller board	Controller board
D	Fan differential pressure sensor	Fan differential pressure sensor
E	Tactile user interface	Tactile user interface
F	Fan	Fan
G		
H		
I	Filter switch	Filter switch
J		
K		
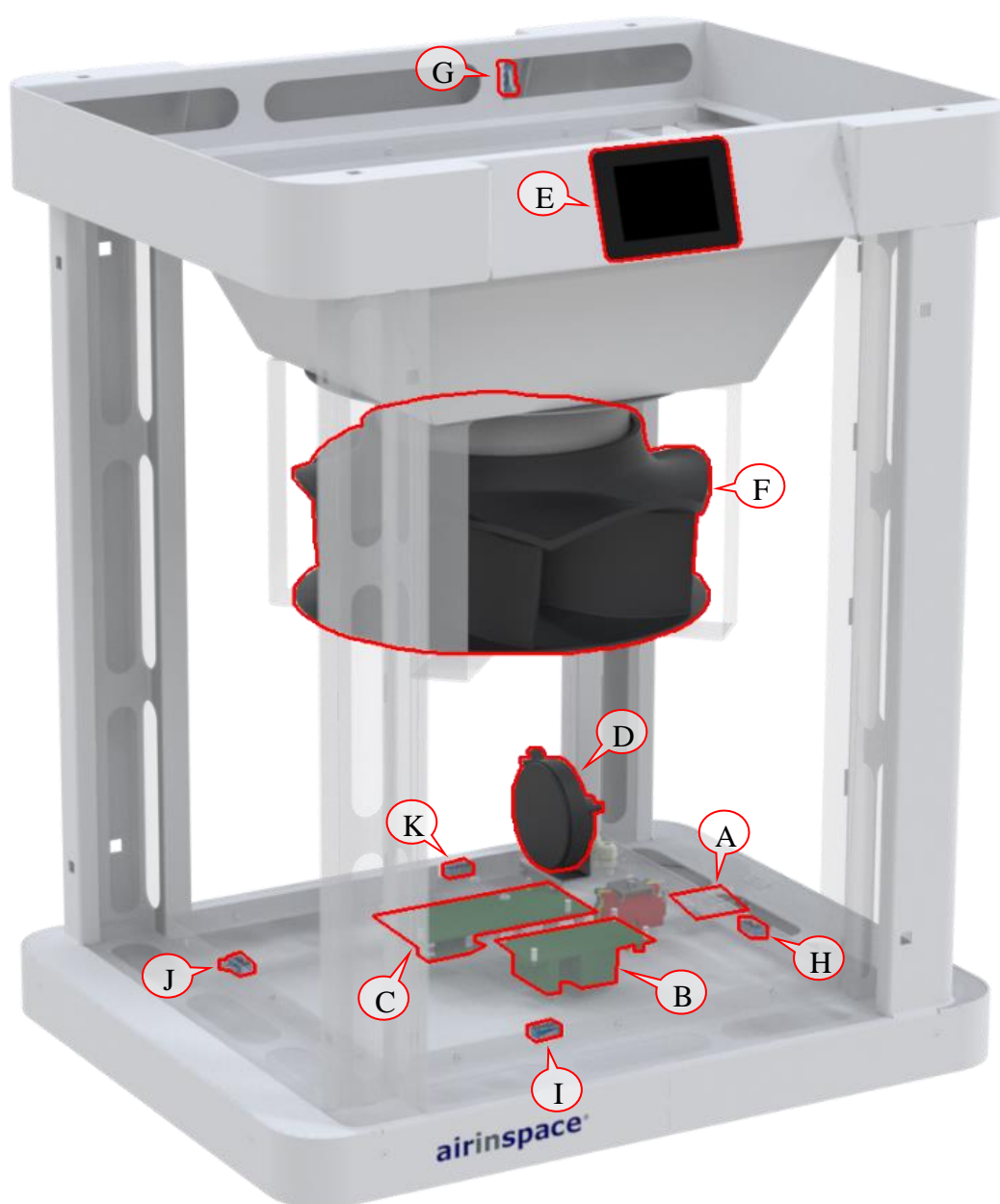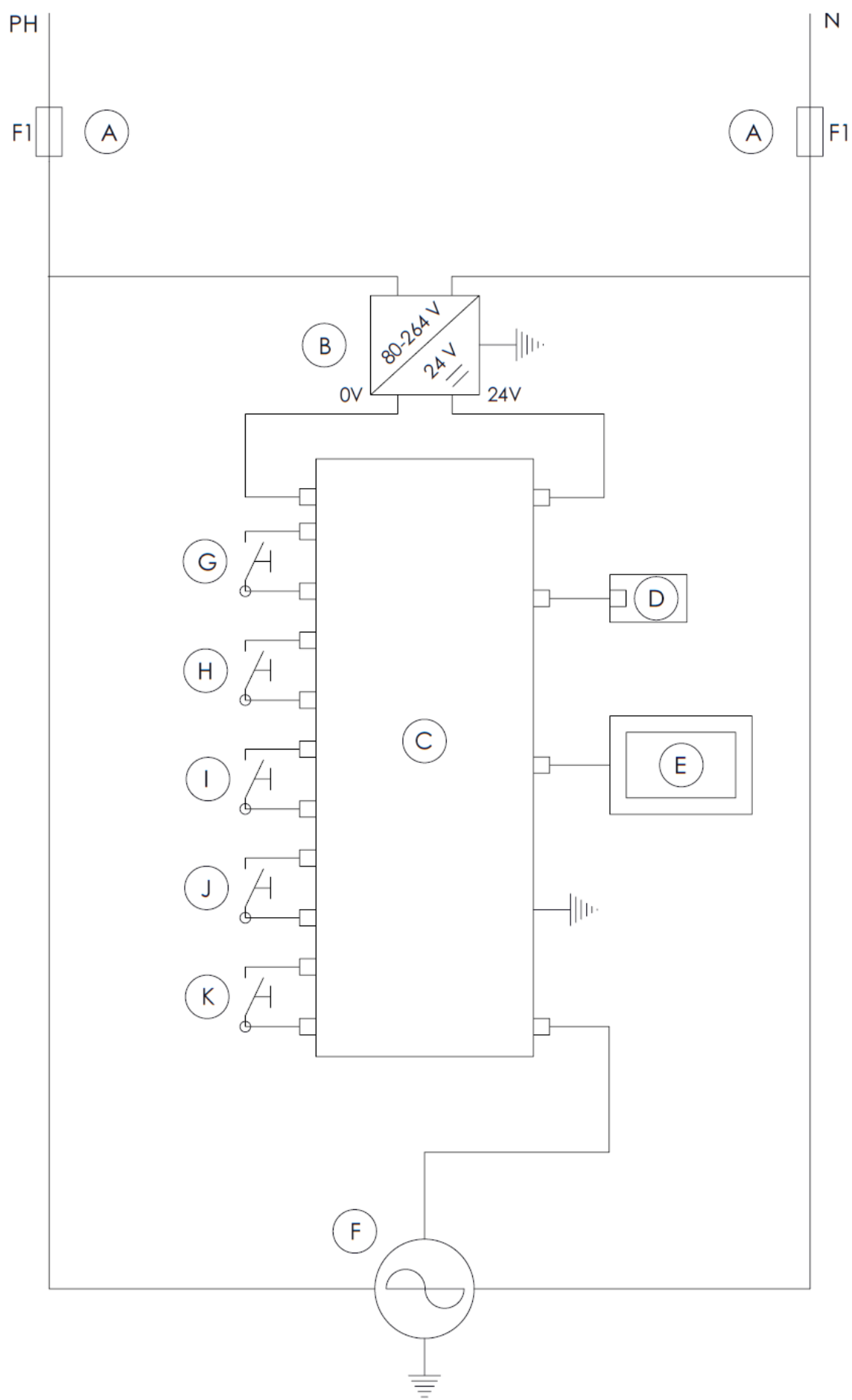
3.12 DISTRIBUTOR WARRANTY

Contact your local **air**in**space®** dealer.
Note: any problems arising from an unauthorised repair attempt, modification, fall, use at incorrect voltage or operations that do not comply with the instructions in the User Manual are not covered by the warranty.

3.13 MODEL IDENTIFICATION

If you wish to contact **air**in**space®** or a dealer, please make sure to provide the serial number of the **HEPA³**Air unit and its date of purchase:
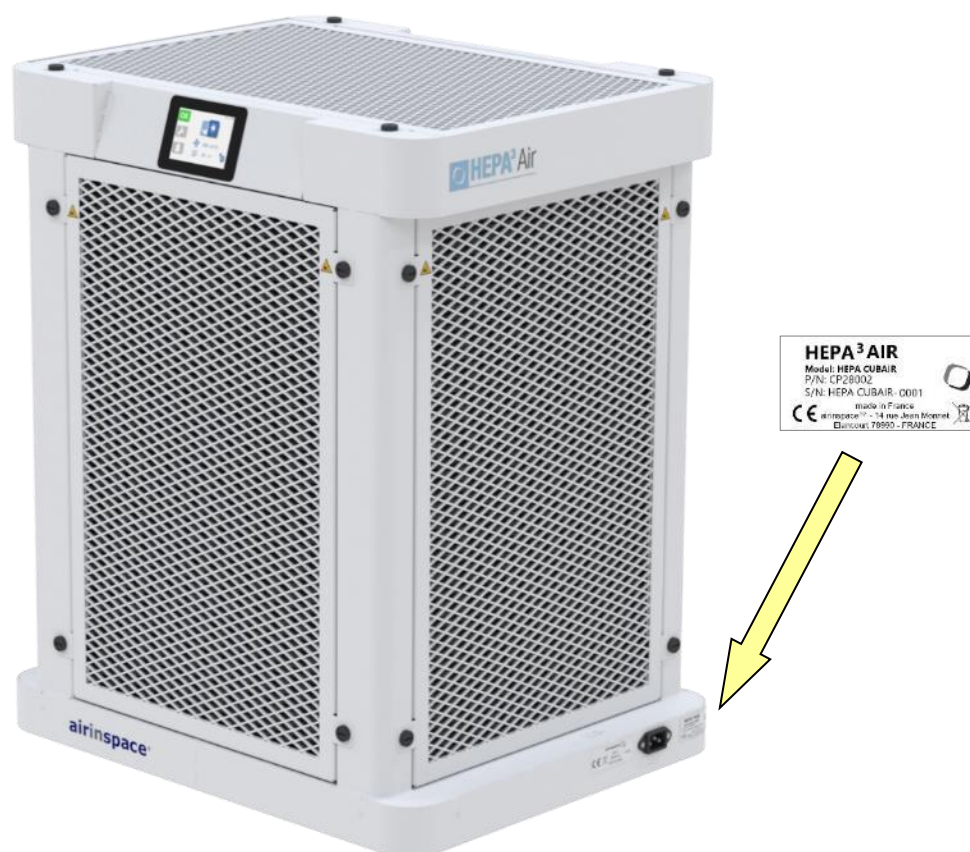
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