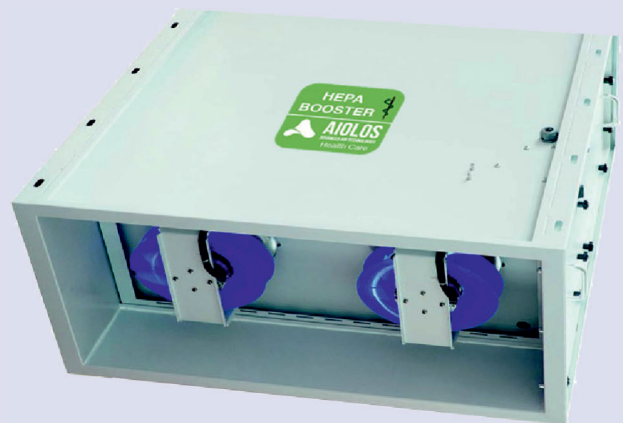


**AIOLOS**  
ADVANCED AIR TECHNOLOGIES



**HepaBooster<sup>®</sup>**

Installation- and user Manual\_EN

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## FOREWORD

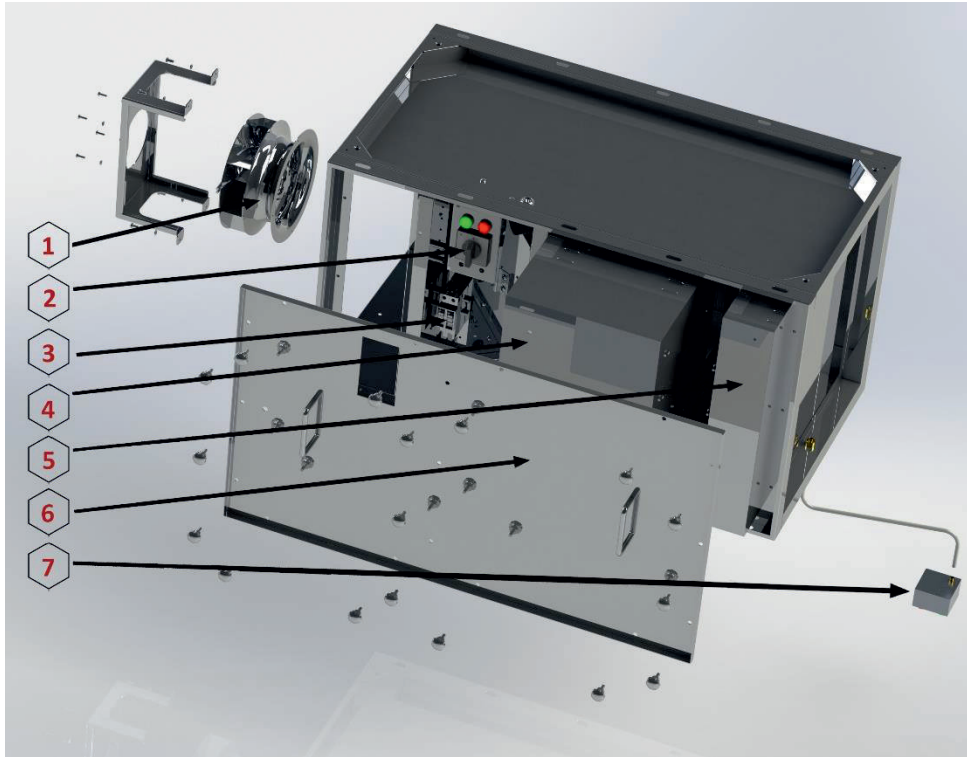
With the Covid-19 pandemic, the importance of indoor air quality and disinfection was once again understood. Parallel to this changing understanding, we developed the HepaBooster unit as important part of hygienic Air treatment solution .

No matter if reinstallation or Part of a new system in Offices, cafeterias, hygienic and medical areas, sports halls, schools, shops and common and individual living spaces. This are the places where the indoor air is mostly polluted and when we consider today's conditions they are the places that need to be safty and clean.

HepaBooster units can be easily installed and used in combination with ducted VRF units, ducted air conditioners.

Thanks to the HepaBooster unit that you will add to your existing or installation phase ventilation system, with harmful contaminated Aerosols are eliminated and a treated clean air is sent to the system.

## HEPABOOSTER HEPA FILTER UNIT COMPONENT LIST



Component Number	Name
1	EC Fan
2	On-Off Switch
3	Electric and Control Panel
4	HEPA Filter
5	G4 Filter
6	Access Door
7	Pollution Control of the Filters and the Test Probe

## HEPABOOSTER TECHNICAL SPECIFICATIONS

Type	BT-450	BT-900	BT-1000	BT-2000	BT-3000
Air Capacity	470 m <sup>3</sup> /h	940 m <sup>3</sup> /h	1000 m <sup>3</sup> /h	2000 m <sup>3</sup> /h	3000 m <sup>3</sup> /h
No Fans	1	1	1	2	3
<b>Filter</b>					
G4 Filter Pressure Loss (Pa)	40	40	40	40	40
H13 Filter Pressure Loss (Pa)	140	140	140	175	160
Flexible Duct Pressure Loss (Pa)	15	15	15	15	15
Total Pressure Loss (Pa)	195	195	195	230	215
Elektr. Power	170 Watt	171 Watt	172 Watt	340 Watt	510 Watt
Power supply	1~200-240V 50/60 Hz				
Amperage	1,75 A	1,75 A	1,75 A	3,5 A	5,25 A
Control signal (V)	0-10 V				
Control signal voltage supply (V)	24 VAC				
<b>Dimensions and Operation Conditions</b>					
Relative Humidity (R.H.)	max.90%				
Operating Temperature (°C)	-10 - 50				
Weight (kg)	70	80	80	150	200
Dimensions (WxDxH)	385x925x346 mm	775x925x346 mm	527x925x532 mm	832x925x532 mm	1290x925x532 mm

## 1. SAFETY PRECAUTIONS

### 1.1. General

HepaBooster Units are designed and assembled in line with AiolosAir quality directives. To ensure the safe operation and use of the unit, please read this document carefully, follow its instructions, and pay particular attention to the warnings made about this unit. Changes made in the design and / or assembly of the HepaBooster HEPA Filter Unit without informing AiolosAir and without the written consent of AiolosAir will void the warranty on the products and the person who changes will be responsible for any damage that may occur.

### 1.2. Applications

HepaBooster Units are designed and used to purify the indoor air from all kinds of fine dust and Aerosols in Cleanroom quality. Viruses, bacteria and harmful organisms such as fungbind to the finest aerosols and are filtered out with them

### 1.3. Warnings

#### Electric Voltage



These labels indicate that there are electric current-conducting parts behind the access cover, cover or panel that may be dangerous for the user / installer. Only qualified personnel complying with local standards should be allowed to work on these parts. These labels are located on the fan access area of the service cover.

#### Grounding



This figure shows where the HepaBooster unit should be grounded and is located on the electrical panel access area of the service access cover.

- Electrical parts in the HepaBooster unit must be grounded.
- The electrical equipment of the unit must be connected in accordance with the relevant standards and regulations in the country of use.

#### Rotating Part



This figure shows that there is rotating machine assembly behind the access cover that could cause injury.

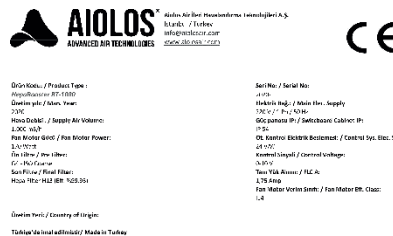
#### Access Cover Fan Zone



This warning notice is located on the fan zone of the service access cover. Before open the HepaBooster the Unit, the user must be waited for at least two minutes when the power supply is cut before opening the access door.

**Attention:** Access / Protection cover must be closed before the HepaBooster unit is started up.

#### Product Label



This label contains special information about the air conditioning unit such as order and device type. This label is located on to an easily visible place on the device.

#### Lifting and Transportation

Detailed information on this subject is in the section below. Packaging materials should be disposed of responsibly and in accordance with the relevant regulations.

## 2. Transportation and Lifting Instructions

### 2.1. General

Transportation and lifting of the HepaBooster Unit should always be carried out in accordance with the instructions below. Non-observance can lead to the destruction of the device and injuries to persons.

### 3. COMMISSIONING CHECKLIST

#### 3.1. Commissioning Checklist

General information about the planning required for commissioning the HepaBooster HEPA Filter Unit is given in the table below. Details about each part of this table will be given on the following pages.

#### **ATTENTION!**

Before commissioning the HepaBooster HEPA Filter unit, ensure that all parts have the correct electrical voltage and make the connections in accordance with the relevant regulations. Access / cover cover must be closed, HepaBooster HEPA Filter unit must be grounded.

#### 3.2. Commissioning Checkpoints

FUNCTION	COMPONENTS	CHECK POINTS	STATUS
<b>General</b>			
<b>Internal Unit Installation</b>			
	Inner and Outer Panels	Damage	
	Links	Connection according to regulation	
<b>External Unit Installation</b>			
	Access Cover	Must be closed before damage / operation	
	Grounding	Connection according to regulation	
<b>Filters</b>			
		Proper filter type and size	
		Deformation on its surface	
		Pressure control of filter pollution	
		Adjustment of pressure difference pressurestat	
	Pressure Difference Indicator	Smooth running / Automation connection	
	Test Measurement Probe	Accurate pressure measurement control	
<b>Fan</b>			
		Damage	
		Proper electrical connection	
		Grounding	
		The right automation connection	
		Proper rotation direction	
		Friction control on the suction side	
		Vibration control while operation	
<b>Control Board</b>			
		Accurate automation connection	
	Sensors	Accurate measurement control	
		Accurate control board connection	
<b>Electric Board</b>			
		Compliant connection with regulations	
		Grounding	
	On / Off Switch	Accurate connection	
		Function test	

follow these instructions may cause irreparable damage to the device and endanger the lives of people in the vicinity of the device. AiolosAir does not assume any liability for the consequences resulting from failure to comply with these instructions.

Transportation and transportation activities should be carried out by expert personnel. Lifting must be carried out in accordance with the relevant regulations using certified and approved lifting equipment.

## 2.2. Transportation and Storage

HepaBooster units should only be lifted with specified lifting methods. After the HepaBooster unit is placed on a suitable wooden pallet for transportation, it can only be transported with a suitable Forklift, provided that the following instructions are followed.



**Image1.** Lifting with Forklift

Units are shipped to the field in one piece. If the protective packaging on the units is removed, dirt may enter the filter and fan sections.

Necessary precautions should be taken in the construction site environment and protective packaging should not be removed until the unit is installed.

Filters of units waiting outside for a long time lose their properties in case of exposure to the sun. For this, the filters should be stored in the shade and in places free from moisture.

## 2.3. Horizontal Transport

For horizontal transportation of the HepaBooster Filter unit, it can be transported on a wooden pallet with the help of a suitable forklift. It should always be used as shown in Image 1 for horizontal lifting and carrying operations. **FOR HORIZONTAL TRANSPORT, ALWAYS USE A SUITABLE WOODEN PALLET AND CARRY IT ACCORDING TO SIGNS AND INSTRUCTIONS SPECIFIED WITH A SUITABLE FORKLIFT. AiolosAir IS NOT LIABLE FOR ANY DAMAGES OR INJURY CAUSED BY NON-EXPERT PERSONNEL AND LIFTING AND / OR HANDLING BY AN INCORRECT FORKLIFT.**

The following method is recommended for lifting and transporting the filter unit horizontally:



**Image2.** Lifting with Forklift

**Note:** Forklift and wooden pallet must be selected in accordance with the weight and dimensions of the filter unit.

## 5. COMMISSIONING INSTRUCTIONS

### 5.1. Housing

Order code, unit type, serial number, etc. The label containing the unit information is located on an easily visible place on the unit. In this way, the customer can easily read the unit information.



Aviolar Hava Temizleme Sistemleri A.Ş.  
Etiler / Beşiktaş / İstanbul / Türkiye  
info@aiolos.com.tr  
www.aiolos.com.tr



Ürün Kodu / Product Type :  
HepaBooster RT-1000  
Çalışma Hızı / Motor Power :  
230C  
Hidrostatik / Supply Air Volume :  
1000 m³/h  
Fan Motor Gücü / Fan Motor Power :  
24W/0.035A  
Fan Hızı / Fan Speed :  
600 RPM  
Sızdırmazlık / Final Filter :  
Hava Temizleme Üniteleri

Çalışma Türü / Country of Origin :  
Türkiye / Turkey / Made in Turkey

Seri No / Serial No :

4152  
Hidrostatik / Motor Power :  
230V / 50Hz  
1000m³/h / Supply Air Volume :  
1000  
Fan Motor Gücü / Motor Power :  
24W  
Fan Hızı / Fan Speed :  
600 RPM  
Sızdırmazlık / Final Filter :  
Hava Temizleme Üniteleri

### 5.2. Housing Panels

Check the HepaBooster HEPA Filter unit panels for damage. If any, remove any dirt and stains from the surfaces and eliminate the possibility of damage in the long term. Check the sealing gaskets on the unit, if any, and repair if necessary.

### 5.3. Housing, Access and Enclosure Covers

In addition to the door handle and locks, check the overall operation of the nut and rivet system and determine whether the connection mechanisms are moving properly.

### 5.4. Grounding

Make sure that the HepaBooster HEPA Filter unit is properly grounded and in accordance with the relevant regulations. A label indicating the grounding location of the unit is located on the cabinet or on the electrical panel.

### 5.5. Installation and Connection

Since the HepaBooster HEPA Filter unit will be installed on the ceiling, make sure that the instructions in the assembly part are followed and check the fulfillment all mentioned requirements before commissioning the unit.

### 5.6. Air Filters

Check whether the appropriate size and correct filters specific to the application are installed.

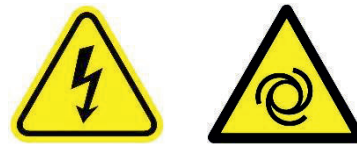
Check whether the filters are placed properly and make sure that they are maintained under appropriate conditions.

Set the filter impurity pressure switches or filter gauges if used.

### 5.7. Fan

- Check whether the fan can move freely without getting caught in the mounting frame, elastic connection, or wiring.
- Check the mains voltage of the electric motor.
- Check and / or connect the engine according to the relevant regulations and with the help of the information provided by the manufacturer and by authorized persons.
- Check the fan rotation direction. This direction should be the direction indicated on the case.
- Measure the current drawn by the electric motor for all phases.
- The current drawn in all phases should be approximately the same and match the information on the product label.
- Check that the flexible connections are properly fitted.
- Make sure that the grounding is done correctly.

**Attention:** Before working on the fan, it must be ensured that the electricity is cut off. Warning signs regarding rotating parts, electrical voltage and open doors are affixed to the door.



### 5.8. Sensors

Sensors are the devices, which help the unit to observe and interpret over asingle system.

- Check that, whether pressure difference values are right calculated.
- Check the sensor, whether it is properly mounted and connected as shown below:

## 4. ASSEMBLY INSTRUCTIONS

### 4.1. General

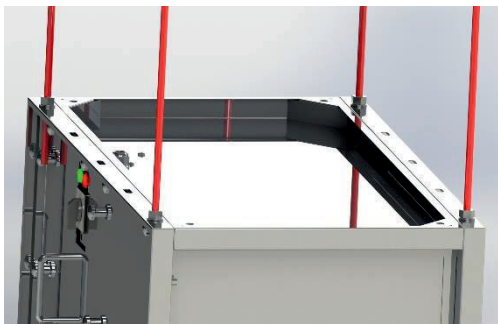
Since the HepaBooster HEPA Filter unit will be hung from the ceiling in the places where it will be installed, it is necessary to have a carrier structure system that can carry the weight of the unit and / or the system.

### 4.2. Mounting to the Supporting Structure

The HepaBooster unit must only be mounted on the carrier structure, therefore can be used the provided elongated holes at the ends of the housing to hang the unit with hanging rods.

These hanger rods must be capable of bearing the weight of the unit and / or system. While mounting the hanger rods to the HepaBooster unit, it is necessary to use double nuts and washers for each hanger bar.

**AiolosAir IS NOT LIABLE FOR DAMAGES OR INJURIES CAUSED BY WRONG INSTALLATION OR APPLICATIONS.**



**Image3.** Assembly to the carrying structure application

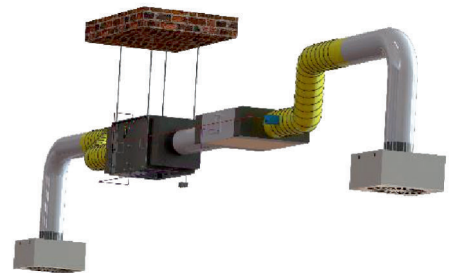
### 4.3. Duct Connection Installation

While the ventilation duct installation it is necessary to use seal for avoiding air leakage. After this application be sure, that both surfaces are proper connected.

### 4.3.1. Ducted A/C Unit

#### Application

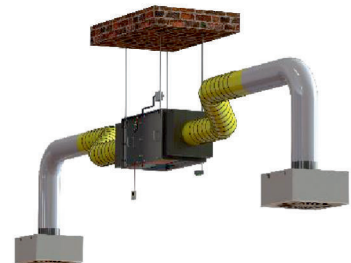
The case of using HepaBooster HEPA Filter unit with a ducted A/C device such as Fancoils, VRFs, WSHP (Water Source Heat Pump), usw. During this usage, 220V power supply comes from a ducted A/C device and 0-10V feeding comes from a sensor, which is mounted onto a supply air ventilation duct after ducted A/C device. Since this usage it is not necessary to use additional power supply out of ducted A/C device and room controller.



**Image4.** Example of ducted A/C application

### 4.3.2. Standalone usage

In case of using HepaBooster HEPA filter unit separately, which means standalone; 220V power supply should be connected to the unit itself and the unit could be controlled via a room controller.

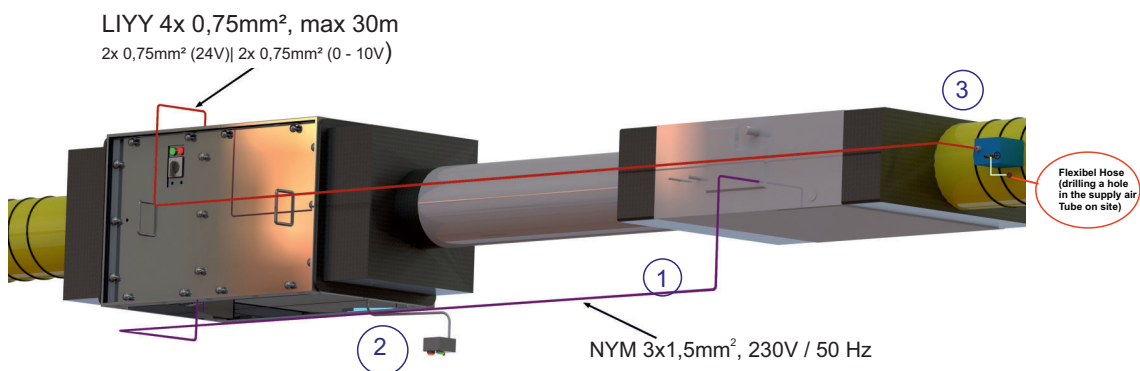


**Image5.** Example of standalone application

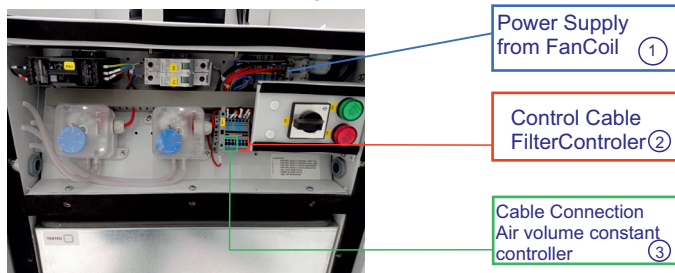
## 4.4. Spare Parts List

Product Name
G4 Filter
H13 HEPA Filter
EC Fan

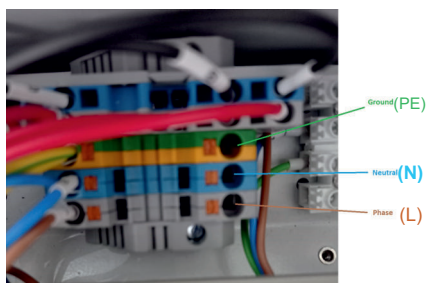
5.9 Electrical connection for ducted HepaBooster



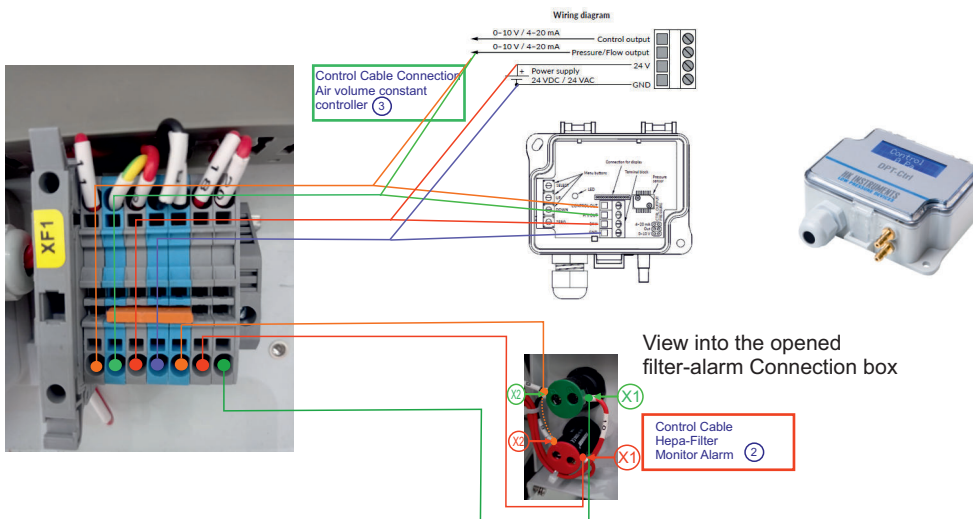
Switchboard Cabinet HepaBooster



HEPABOOSTER Wiring Connection Information



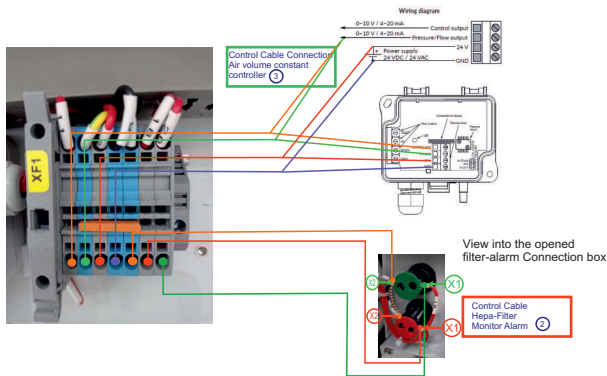
Power Supply from FanCoil ①  
**Connection with FanCoil Power Supply**



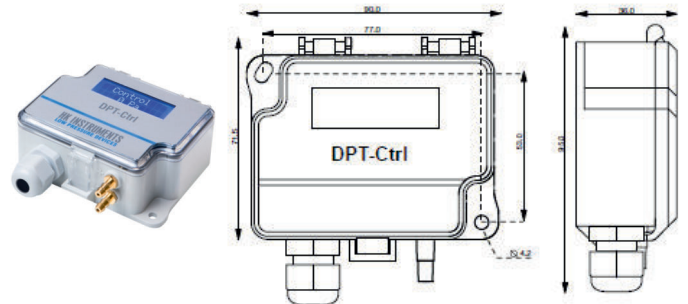
Subject to technical changes. Illustrations and information are not binding.

Electrical connection for ducted HepaBooster

HEPABOOSTER Wiring Connection Information



DIMENSIONAL DRAWINGS



INSTALLATION

- 1) Mount the device in the desired location (see step 1).
- 2) Open the lid and route the cable through the strain relief and connect the wires to the terminal block(s) (see step 2).
- 3) The device is now ready for configuration. **WARNING!** Apply power only after the device is properly wired.

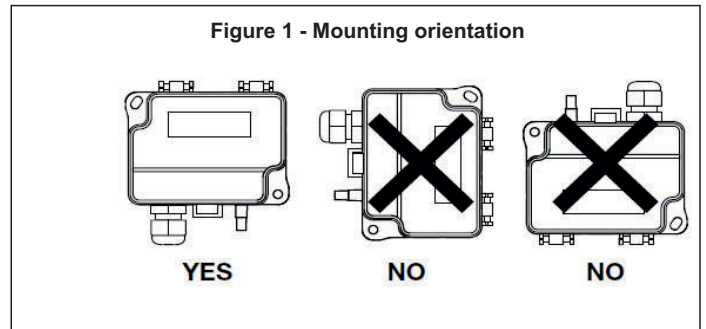


STEP 1: MOUNTING THE DEVICE

- 1) Select the mounting location (duct, wall, panel).
- 2) Use the device as a template and mark the screw holes.
- 3) Mount with appropriate screws.

MOUNTING THE DEVICE CONTINUED

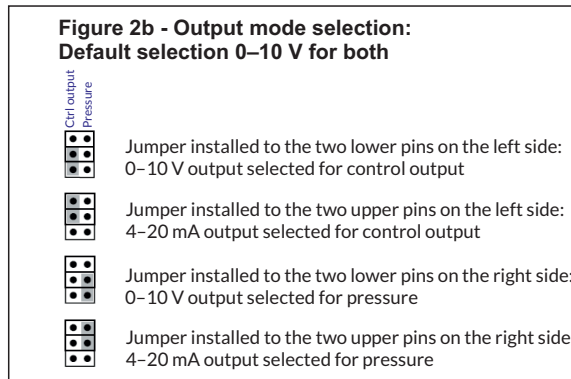
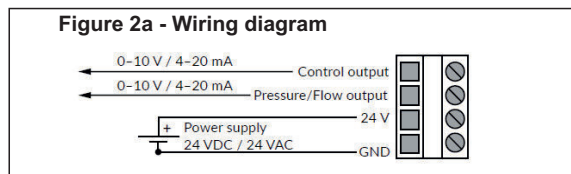
Figure 1 - Mounting orientation



STEP 2: WIRING DIAGRAMS

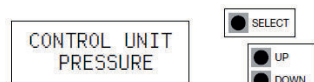
For CE compliance, a properly grounded shielding cable is required.

- 1) Unscrew the strain relief and route the cable.
- 2) Connect the wires as shown in figure 2.
- 3) Tighten the strain relief.



STEP 3: CONFIGURATION

Select the functioning mode of the controller: PRESSURE or FLOW. Select PRESSURE when controlling a differential pressure.



CONFIGURATION

1) Select pressure unit for display and output: Pa, kPa, mbar, inWC or mmWC.

PRESS. UNIT  
Pa

SELECT

UP

down

2) Pressure output scale (P OUT). Select pressure output scale to improve output resolution.

P OUTPUT MAX  
2000 Pa

SELECT

UP

down

3) Response time: Select response time between 1.0-20 s.

RESPONSE TIME  
20 s

SELECT

UP

down

4) Select the setpoint of the controller.

REF PRESSURE  
100 Pa

SELECT

UP

down

5) Select proportional band according to your application specifications.

P-VALUE  
206

SELECT

UP

down

6) Select integration time according to your application specifications.

I-VALUE  
4.00

SELECT

UP

down

7) Select derivation time according to your application specifications.

D-VALUE  
1.00

SELECT

UP

down

8) Push select button to exit menu and to save changes.

SELECT  
EXIT MENU

SELECT

Select FLOW when controlling an air flow.

CONTROL UNIT  
FLOW

SELECT

UP

down

1) Select the functioning mode of the controller  
 - Select Manufacturer when connecting DPT-Ctrl to a fan with pressure measurement taps  
 - Select Common probe when using DPT-Ctrl with a common measurement probe that follows the formula:  
 $q = k \cdot \sqrt{\Delta P}$  (i.e. FloXact)

MANUFACTURER  
Common probe

SELECT

UP

down

Common probe

AiolosAir

SELECT

UP

down

2) If Common probe selected: select measurement units used in the formula (aka Formula unit) (i.e. l/s)

FORMULA UNIT  
l/s

SELECT

UP

down

3) Select K-value

a. If manufacturer selected in step 1:

Each fan has a specific K-value. Select the K-value from fan manufacturer's specifications.

b. If Common probe selected in step 1:

Each common probe has a specific K-value. Select the K-value from common probe manufacturer's specifications.

Available K-value range: 0.001...9999.000

K-VALUE  
9000.000

SELECT

UP

down

4) Select flow unit for display and output:

Flow volume: m<sup>3</sup>/s, m<sup>3</sup>/h, cfm, l/s  
 Velocity: m/s, f/min

FLOW UNIT  
m<sup>3</sup>/s

SELECT

UP

down

5) Flow output scale (V OUT): Select flow output scale to improve output resolution

V OUTPUT MAX  
50.000 m<sup>3</sup>/s

SELECT

UP

down

6) Response time: Select response time between 1.0-20 s.

RESPONSE TIME  
20 s

SELECT

UP

down

7) Select a setpoint of the controller.

REF FLOW  
0.025 m<sup>3</sup>/s

SELECT

UP

down

8) Select proportional band according to your application specifications.

P-VALUE  
206

SELECT

UP

down

9) Select integration time according to your application specifications.

I-VALUE  
4.00

SELECT

UP

down

10) Select derivation time according to your application specifications.

D-VALUE  
1.00

SELECT

UP

down

11) Push select button to exit menu.

SELECT  
EXIT MENU

SELECT

## for ducted HepaBooster

### 5.9.1 Electrical connection for single unit

#### STEP 3: CONFIGURATION

**NOTE! Always zero the device before use.**

To zero the device two options are available:

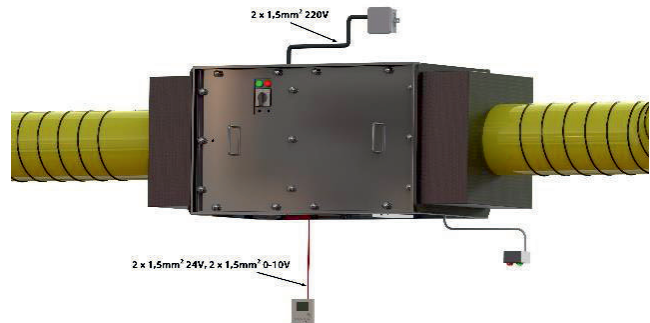
- 1) Manual Pushbutton zero point calibration
- 2) Autozero calibration

Does my transmitter have an autozero calibration? See the product label. If it shows -AZ in the model number, then you have the autozero calibration.

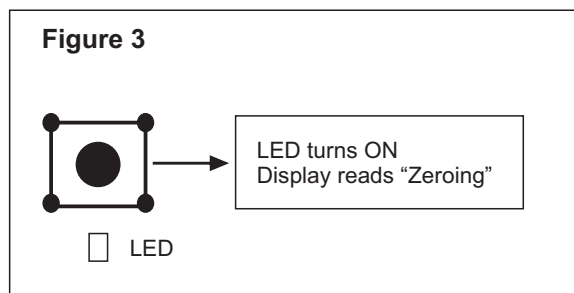
- 1) Manual Pushbutton zero point calibration

NOTE: Supply voltage must be connected at least one hour prior to zero point adjustment.

- a) Disconnect both pressure tubes from the pressure ports labeled + and –.
- b) Push down the zero button until the LED light (red) turns on and the display reads “zeroing” (display option only). (see figure 4)
- c) The zeroing of the device will proceed automatically. Zeroing is complete when the LED turns off, and the display reads 0 (display option only).
- d) Reinstall the pressure tubes ensuring that the High pressure tube is connected to the port labeled +, and the Low pressure tube is connected to the port labeled –.



**Figure 3**



#### ZEROING THE DEVICE CONTINUED

##### Autozero calibration

If the device includes the optional autozero circuit, no action is required.

Autozero calibration (-AZ) is an autozero function in the form of an automatic zeroing circuit built into the PCB board. The autozero calibration electronically adjusts the transmitter zero at predetermined time intervals (every 10 minutes). The function eliminates all output signal drift due to thermal, electronic or mechanical effects, as well as the need for technicians to remove high and low pressure tubes when performing initial or periodic transmitter zero point calibration. The autozero adjustment takes 4 seconds after which the device returns to its normal measuring mode. During the 4 second adjustment period, the output and display values will freeze to the latest measured value.

Transmitters equipped with the autozero calibration are virtually maintenance free.

## 6. MAINTENANCE CHECKLIST

### 6.1. Checkpoints and Recommended Maintenance Intervals Checklist

General information about the planning required for the inspection and maintenance of the HepaBooster HEPA Filter unit is given in the checklist below. On the following pages, more detailed explanations will be made about each section in this list.

**ATTENTION!**  
 Before any inspection or maintenance, do not forget to deenergize all parts and ensure that the fan is deactivated before opening the access cover.

FUNCTION	COMPONENTS	CHECK POINTS	Monthly	3 Months	6 Months	Annually	Notes
Body							
Inside the Unit	Inner Panels	Contamination and Damage					
	Outer Panels						
Door and Access / Enclosure Covers	Hinges	Operation of Hinges and Locks					
	Locks						
	Door Seal						
Filters	Coarse Filter	Pressure Drop and Tightness Checks in Addition to Filter Condition Control					
	HEPA Filter						
	Differential-Pressure Indikatoran						
	Test Measurement Probe						
Fan		Connection and Working					
		Impermeability					
Sensors		Detection Control					
		Connection Check					
Electric and Control Boards		Ground Control					
		Leakage current Control					
		Connection Check					
		Wiring and Connection Control					

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## 7. Maintenance Instructions

### 7.1. General

Before commissioning checks should be made according to the commissioning checklist.

Maintenance and cleaning or changes should only be carried out by authorized personnel under the supervision of a qualified supervisor.

The inlet and outlet parts of the HepaBooster HEPA Filter unit components are accessible for cleaning purposes, but it is recommended that they be easily and safely removed; this should be taken into an account when modifying fittings for pipes and ducts.

Do not open any access panels or touch electrical components in the applied position unless necessary for measurement, testing or adjustment. Such operations should only be carried out by an authorized qualified electrician, equipped with suitable tools, and using appropriate protective equipment against electric shock. Before removing any panels from the housing or before removing any part of the unit, isolate it from the main electrical power supply and remove fuses.

When working on the unit or performing maintenance operations, personnel must take into an account the occupational health and safety requirements and regulations.

Since HepaBooster HEPA Filter units are mounted on the ceiling, most maintenance or repairs will be performed at a height of more than 2 meters. Appropriate precautions should be taken to keep people passing by using a suitable barrier / warning system away from access equipment such as stairs and towers. All barriers must be located at a suitable distance to avoid the risk of injury to working personnel from falling tools / parts. All equipment used to provide access for high-duty operation must be properly anchored and reinforced by qualified support personnel to meet relevant National / Local safety regulations.

### 7.2. Storage

HepaBooster HEPA Filter units must be stored and installed indoors. These operations are not recommended in open areas.

Storage process: must be built in dust-proof, clean and dry conditions (if necessary,

covered with waterproof materials during a sea transportation).

Before installation, the components should be checked for obvious contamination and removed.

### 7.3. Housing

- i. Control of panels from outside:

If the paint is damaged, if necessary, remove the rust and touch up with a quality primer (anti-abrasive) and topcoat paint.

- ii. Control of the panel and the unit from inside:

Clean the dirt. After removing the rust on the paint finishes, if necessary, touch up a coat of quality paint on the quality anti-abrasive primer.

### 7.4. Access Cover

Check the locks, hinges and sealing gaskets on the access cover. If any damage is observed, ensure that necessary precautions are taken.

### 7.5. Grounding

Make sure that the grounding and installation of the unit is properly done.

### 7.6. Indoor Air Intake

Especially the indoor air intake area becomes contaminated because of the penetration of pollutants in the air. Maintenance intervals must be observed. Accumulated contaminants can cause irreparable damage to panels. Thoroughly clean the indoor air inlet section and fix any damage you will detect, as specified in the "7.3 Body" section.

### 7.7. Air Filters

**Warning: The Filters must be changed by only authorized staff.** Filters should be checked for excessive contamination; pressure drop and their location and damage at specified intervals. Since the front coarse filters are slid from the side, ensure that they are correctly placed and pushed towards each other so that they fit well. Filters should be changed at required intervals, and these specified intervals indicate the maximum replacement time. The replacement schedule varies depending on the type and quality of the filter used and the pollution level of the ambient air. The pressure loss over the contaminated filter can be measured and

tested on the control panel using a differential pressure sensor. Instructions for the maintenance of special filters are available for request.

The restriction of air flow due to dirty filters can have a negative effect; besides, this may cause unnecessary stress on the motor or motors, leading to a shortened product life. Filters will only be replaced with filters that comply with the specifications specified in the filter labels on the covers of the filter functions.

Filters of the HepaBooster HEPA Filter unit are 'disposable' type and should not be cleaned with washed. Light dust deposits and dirt on the filter frames can be carefully cleaned.

Since different categories of filters are used in the HepaBooster HEPA Filter unit, knowing, and specifying the technical characteristics of these filters will be useful for both usage and maintenance.

i. **G4 Coarse Filter:**

G4 coarse filters are called the most efficient filter type of pre-filtering, because the rate of holding large particles is more than 90%. They have a value between 6 and 8 according to ASHREA MERV 52.2 standard.

According to ASHRAE 52.2 and ISO 16890 Standards Approximate Filter Classification, which tested under ASHRAE Standard.	
ASHRAE MERV (Standart 52.2)	ISO 16890 Classification
1-6	ISO Coarse Filtration
7-8	ISO Coarse Filtration %95
9-10	ePM <sub>10</sub>
11-12	ePM <sub>2.5</sub>
13-16	ePM <sub>1</sub>

Image10. ASHRAE MERV and ISO 16890 Ratings

ii. **HEPA Filter:**

The efficiency of HEPA filters is much better than MERV 16 value. HEPA filters are therefore much more efficient than other filters at capturing relatively smaller particles (~ 0.3µm). (>%99,97).

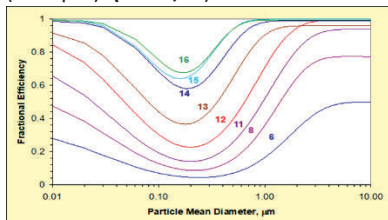


Image11. Filter efficiency table according to ASHRAE MERV 52.2.

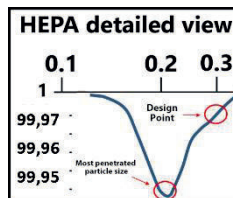


Image12. HEPA filter efficiency chart

The filters used are very sensitive. For this reason, it should be very careful and sensitive during transportation and assembly. How to behave when working with filters is schematically explained in the figure below.



Image13. Issues to be considered when working with filters

**Necessary precautions during filter changing:**

- i. Use N95 face mask with respirator
- ii. Eye protection
- iii. Single use gloves
- iv. Single use apron, coveralls and galosh

7.8. Fan

Check and maintain the fan at specified intervals. Make sure that the connections between the unit body and the fan and the tightness are smooth. If there is a loosening or sealing problem, ensure that necessary precautions are taken.

Fans should be thoroughly cleaned. Areas to be cleaned include blowers, fan housings, plenums (excluding ceiling supply and return plenums), blades or fins. All visible contaminants on surfaces must be cleaned.

To keep the engine ventilation function working at maximum efficiency, use a vacuum cleaner and brush it to remove dust from the engine vents.

Pay attention to the insulation of the terminal box while making the motor cable

connections. No moisture should get inside the box.

### 7.9. Sensors

Sensors in the unit are vital for the system. Therefore, at the latest, once a year, general maintenance should be carried out and the sensors should be verified to work properly before the unit is put into operation.

### 7.10. Electric and Control Panel

The control of the electricity and control panel should be carried out in specified periods by taking the necessary precautions. The grounding connections of the panel, panel connections should be made properly and there should be no electrical leakage.

### 7.11. Sanitization

The air inlet and outlet parts of the HepaBooster HEPA filter unit must be freely accessible for cleaning purposes. Components can be easily replaced via the maintenance openings for cleaning or maintenance purposes. When a maintenance cover is removed, make sure that nobody is standing under the unit and secure the maintenance cover against falling. The covers may only be opened by authorised persons. Before starting cleaning work, the system technician must visually inspect the unit to see if there is any visible damage. If damage is detected, it must be documented and, if necessary, repaired by replacing the components. Only use original AiolosAir spare parts. If necessary, replace missing or damaged fasteners and gaskets (in appropriate specifications).

### 7.12. Mechanic Sanitization

Mechanical cleaning methods should be used to remove contaminants from the HVAC system and safely clean contaminants within the facility. Any cleaning method or combination of methods that could damage the components of the HepaBooster HEPA Filter unit or negatively alter the integrity of the system cannot be used.

During mechanical sanitization:

- Vacuum units

- Mechanical brushes and hand brushes
- Compressed air sources
- Steam
- Other tools

Using, adhered particles and residues can be removed and removed in a controlled manner.

**Note:** Filters must be removed from the device during mechanical sanitization and must be properly placed in the device after cleaning. Mechanical cleaning should only be carried out by authorized and competent personnel.

All the methods used are vacuum collection devices used continuously during cleaning. The vacuum collection device must have sufficient power to keep all areas cleaned under negative pressure so that accumulation is collected, and the enclosure is protected.

Clean all interior surfaces and components. Clean visible contaminants and debris from surfaces inside the air conditioning unit.

**Note:** The filters of the HepaBooster HEPA Filter unit should never be washed.

The inlet and outlet parts of the HepaBooster HEPA Filter unit components are accessible for cleaning purposes. However, when the functions of internal components need to be removed for cleaning or maintenance purposes, accessibility is provided via removable panels, the components can be easily taken out. Particular attention should be paid to supporting the panel sufficiently when working at heights. The covers should only be opened by authorized persons.

The places where the outer panels and grills are located should be cleaned from inside and outside using hot soapy water and a soft cloth. The use of abrasive or strong detergents should be avoided in order not to damage the painted surface.

Door seals should be checked and replaced if necessary.

If, for any reason, the sealing materials used in the HepaBooster HEPA Filter unit need to be changed, care should be taken that they have closed pores; they must not absorb moisture or emit odor in any way and form a nutritious bottom layer especially for microorganisms.

HepaBooster filtre ünitesi suitable to operate 10% and 90% relative humidity range and 0°C and + 50°C temperature range.

### 7.13. Cabling

The unit should be checked for loose connections or frayed wires. Clean and tighten all connections or repair or replace any worn or damaged wires and cables. Take care not to damage the wiring harness while working on the unit. When reconnecting wires and cables, make sure they are not damaged by friction or contact with a hot surface. Always refer to the appropriate electrical diagram when installing parts or new parts that were previously removed. Do not spill cleaning agents on the motor and cables. Check the system after wiring to avoid any possible leakage.

## 8. Taking the Air Conditioning Unit into Operation

### 8.1. Turning Off the Unit

Disconnect the power to the HepaBooster HEPA Filter unit and wait for the unit to discharge its mechanical and electrical energy.

### 8.2. Disassembling the Unit

Disassembly of the HepaBooster HEPA Filter unit must be done by competent persons.

Use original lifting equipment and proper lifting points.

Components must be recycled or disposed of according to the material type, in accordance with relevant local regulations.

### 8.3. Components that Can Be Recycled

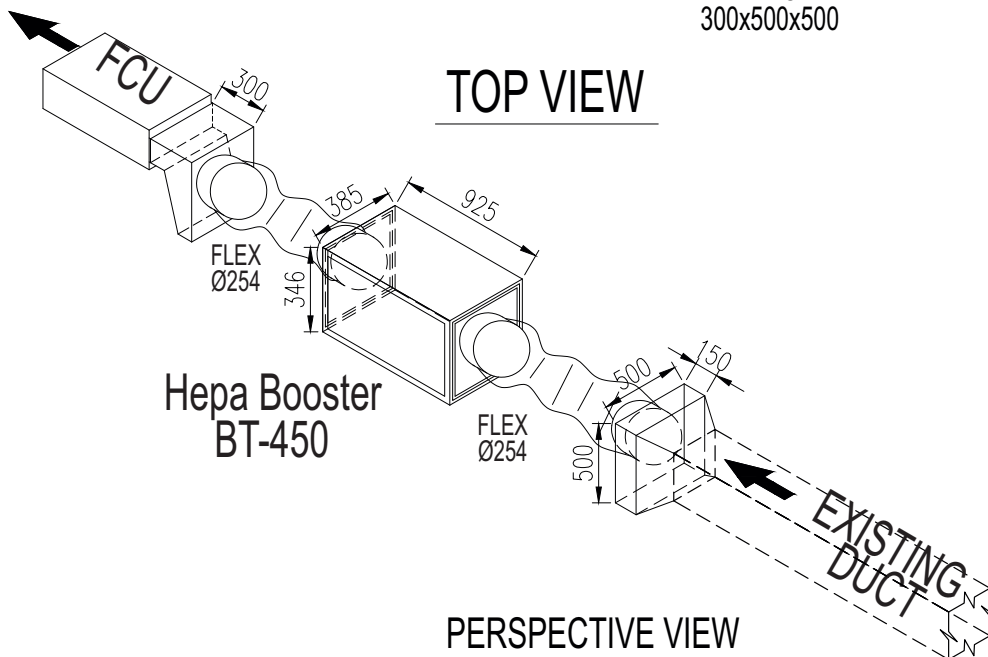
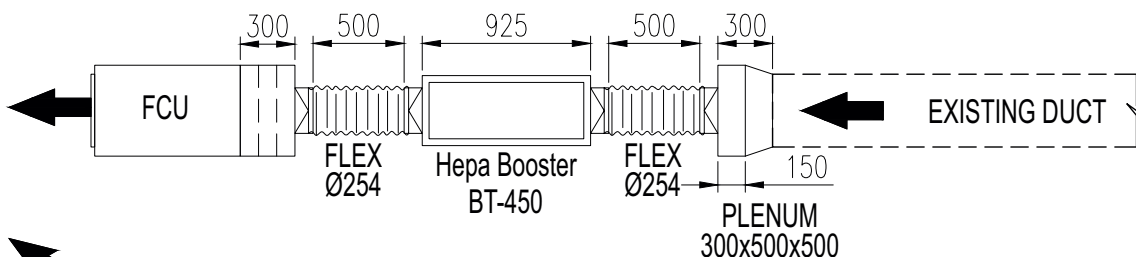
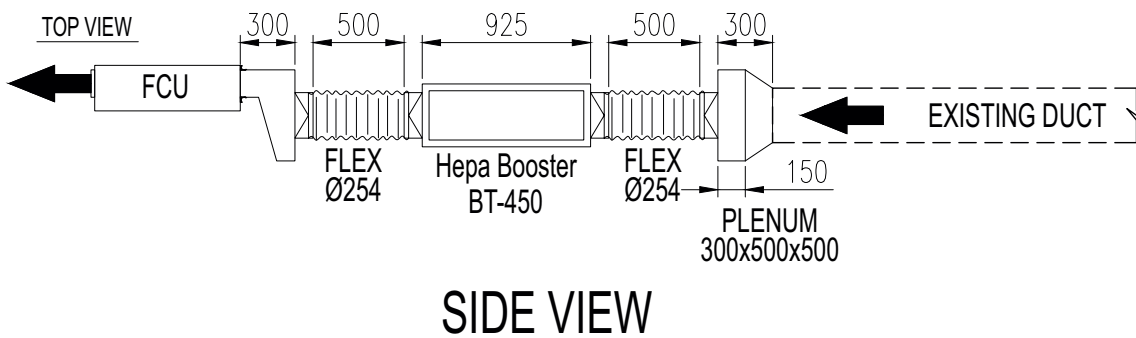
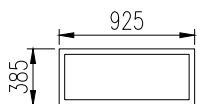
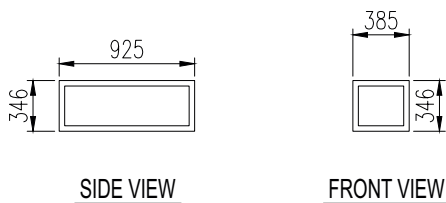
Plastic parts and electrical components suitable for all kinds of metal components.

### 8.4. Recycling of Electrical and Electronic Equipment

Electronic components must be removed by authorized persons and recycled in accordance with relevant local regulations.

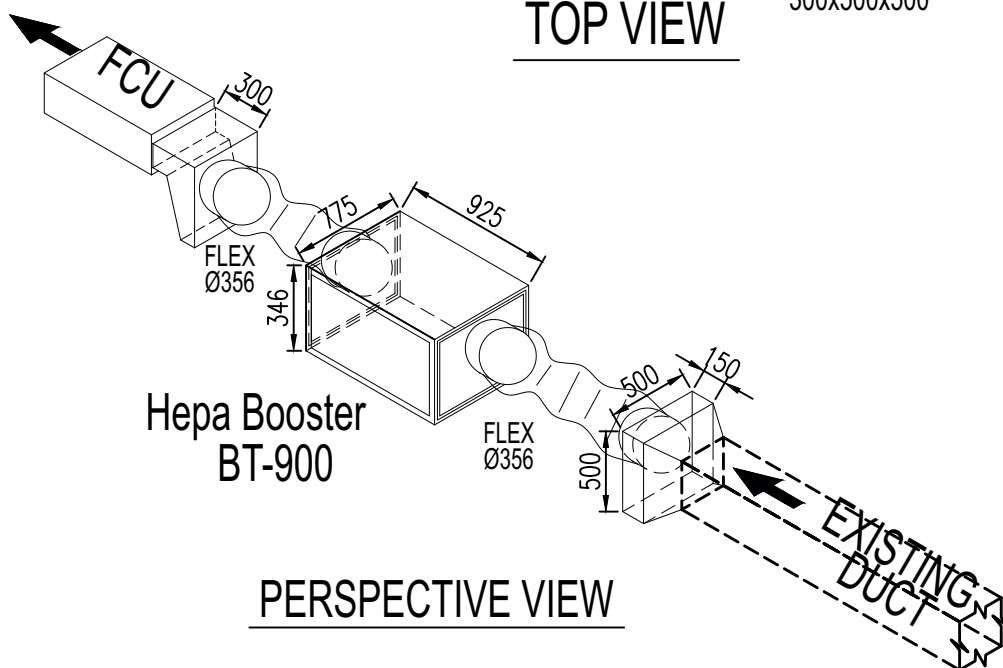
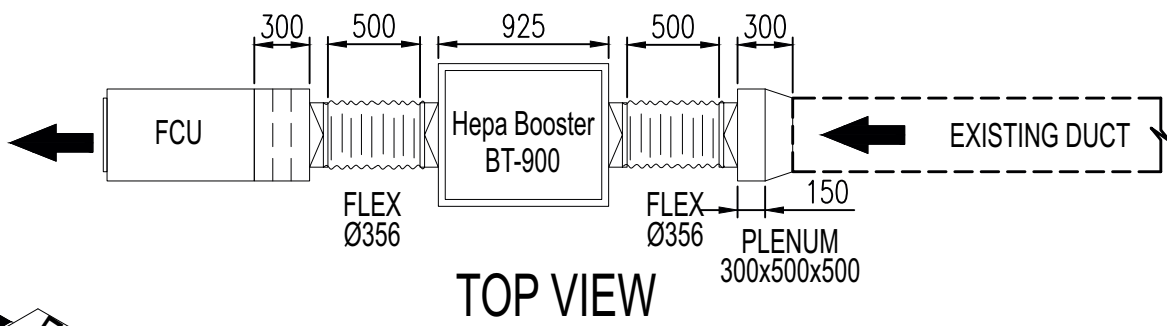
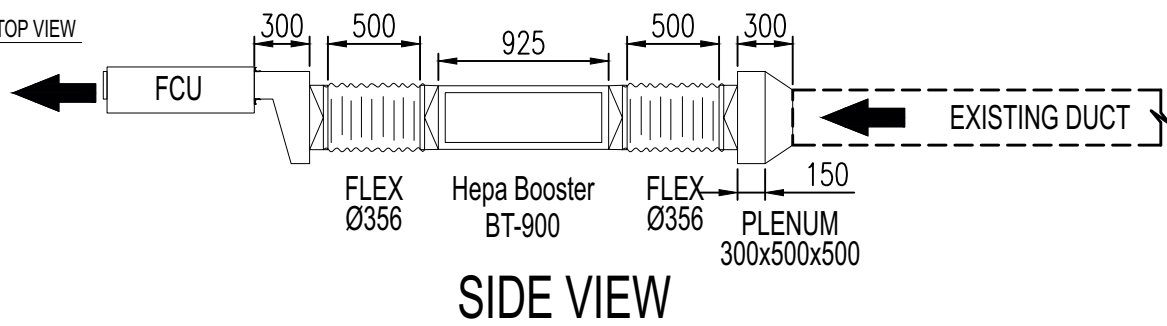
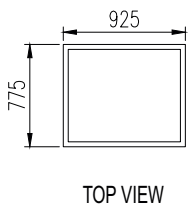
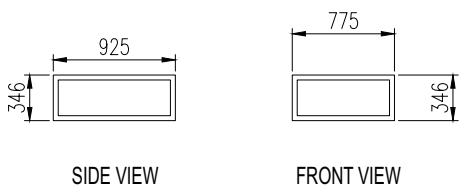
### 8.5. Disposal of Filters

Filters are for single use only and should never be thrown into the garbage together with domestic wastes after being disassembled. Filters must be disposed of in accordance with the relevant regulations.

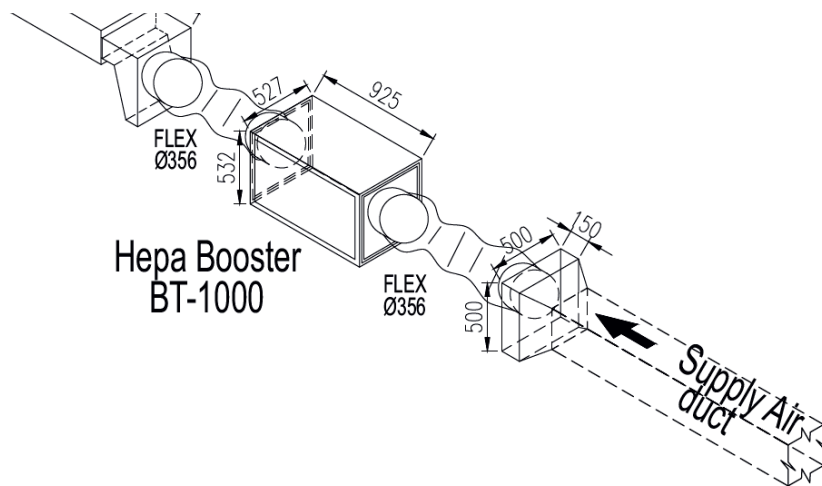
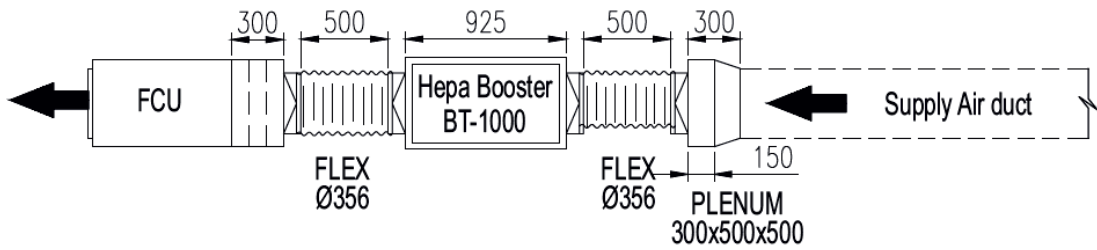
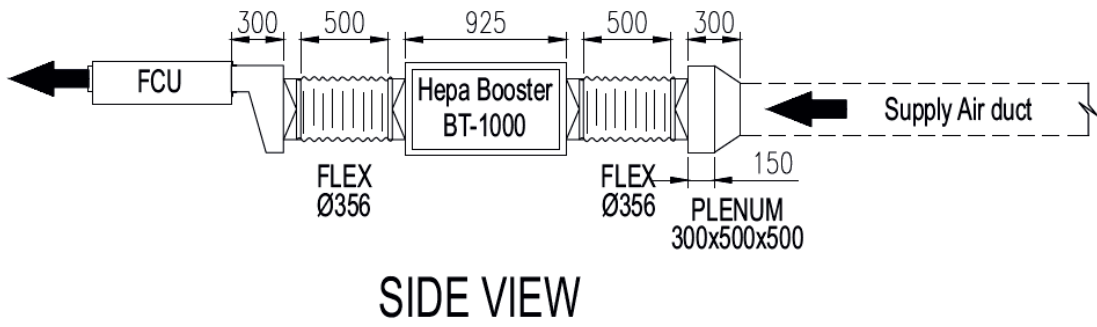
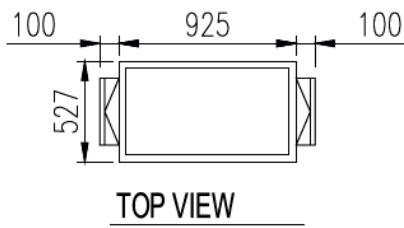
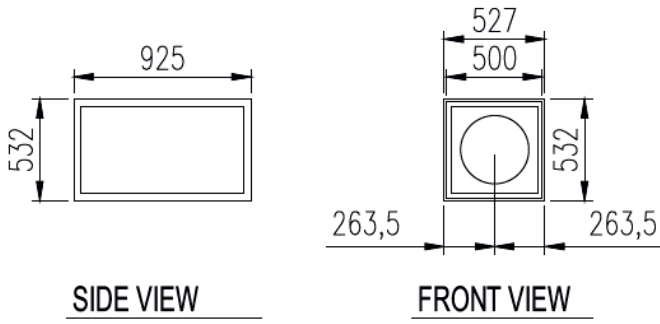


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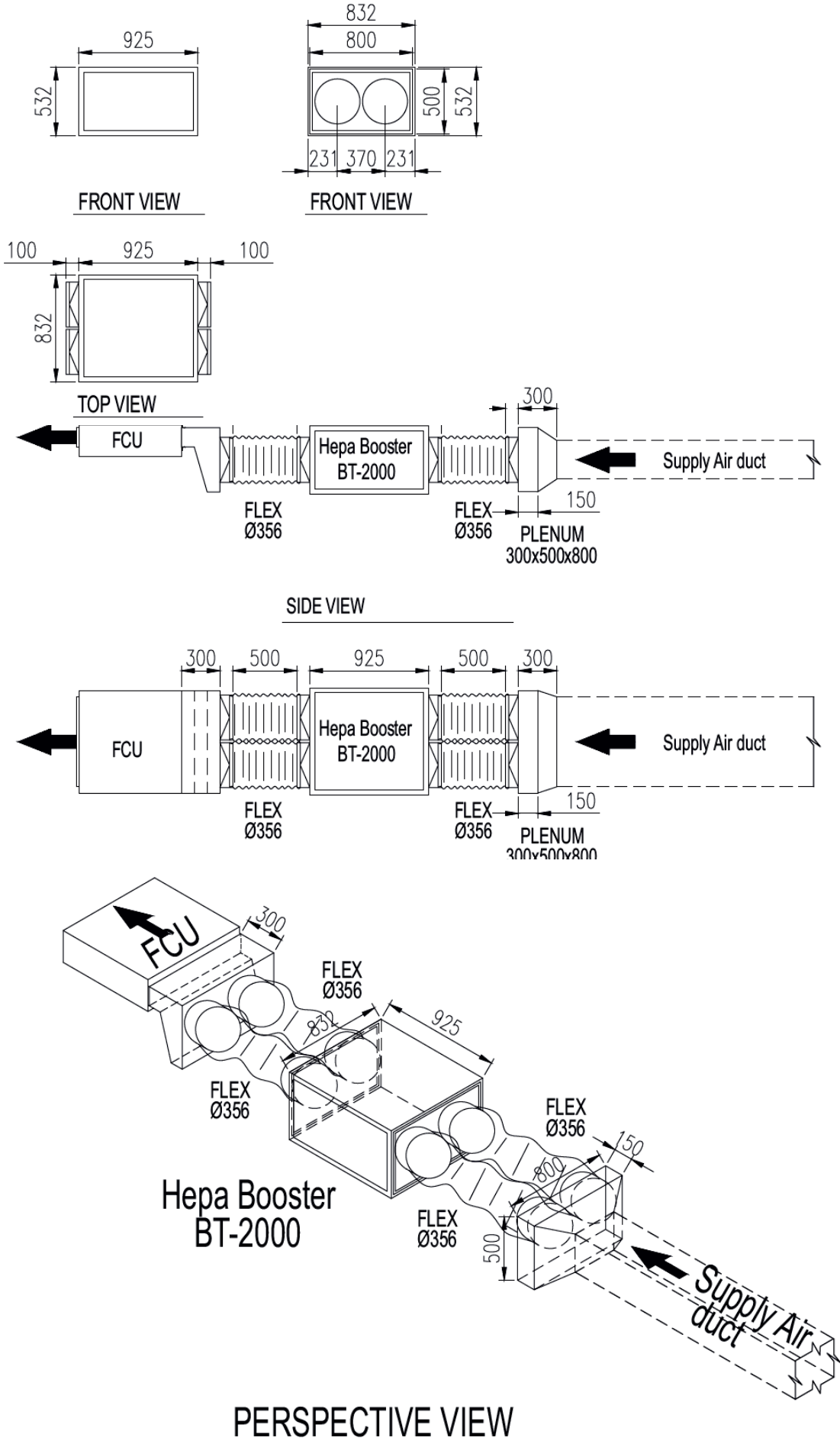


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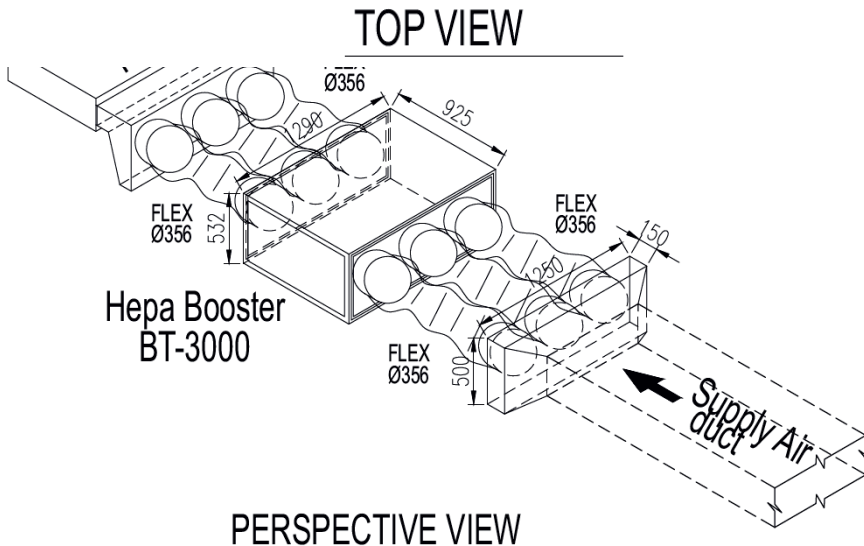
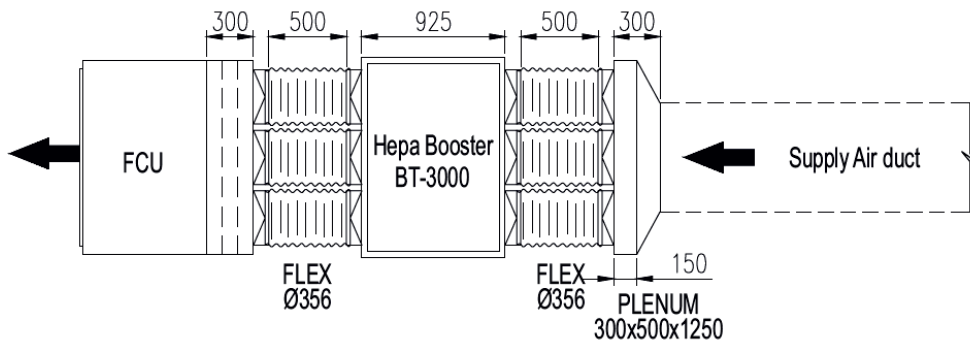
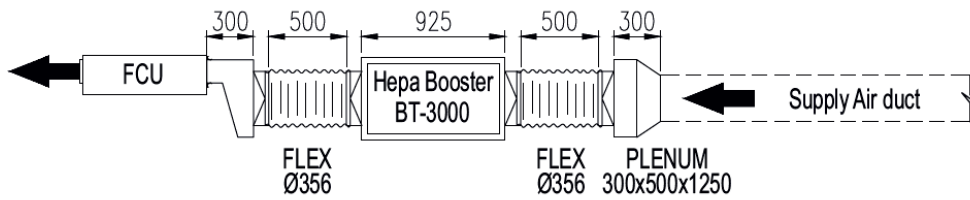
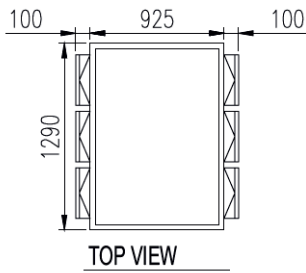
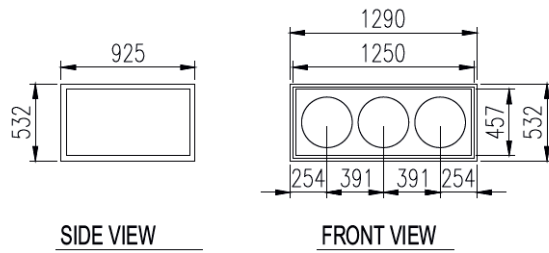
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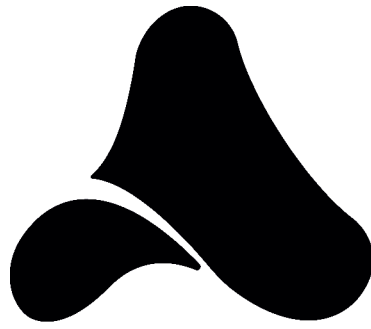


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ADVANCED AIR TECHNOLOGIES

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