INSTALLATION OPERATION AND MAINTENANCE MANUAL

DAFU-IOM —01

DAIKIN AIR FILTRATION UNIT

ORIGINAL INSTRUCTIONS

DAIKIN MIDDLE EAST & AFRICA FZE

Contents

General Information 03
Warnings for the Operator 03
Assistance 03
Receiving and Inspection 03
Purpose of the Manual 04
Details of Manufacturer 04
Identification 04
Use of the Unit 05
Introduction Guidelines 05
Qualifications 05
Safety Warning 06
Warranty 07
Environmental Conditions 07
Technical Features and Specifications 08
Dimensional Drawing 10
Wiring Diagram 10
Routine Maintenance 11

Non-Routine Maintenance

Access to Internal Components 12
MERV8 Filter 12
Carbon Filter 12
UV Lamp 13
HEPA Filter 13
EC Fan 13
Trouble Shooting 14
Service Contacts 14

GENERAL INFORMATION

IMPORTANT

This manual is an important document for qualified personnel, but it cannot replace the latter. All activities must be carried out in compliance with local laws and regulations.

The unit referred to in this manual must be used and maintained under safe conditions to avoid risks to the operators both when using the machine and when carrying out maintenance and repair. Therefore, it is necessary to read this document carefully and respect the mentioned contents of the same and keep it with care.

WARNINGS FOR THE OPERATOR

- BEFORE USING THE UNIT, READ THIS USE AND MAINTENANCE MANUAL.
- THE OPERATOR MUST SCRUPULOUSLY ADHERE TO ALL THE INSTRUCTIONS, SAFETY RULES AND OPERATING LIMITS OF THE UNIT.

ASSISTANCE

- In the case of non-routine maintenance, it is advisable to contact authorized personnel.

RECEIVING AND INSPECTION

The unit must be inspected immediately on delivery at the final installation place; any damages found must be immediately reported to the carrier. Please check on the unit nameplate that the model and supply voltage correspond to the order. This must be done before the unloading of the unit.

Any damage or non-conformity with the order must be written on the delivery note and a written complaint must be forwarded to:

DAIKIN MIDDLE EAST & AFRICA FZE

P.O. BOX 18674

JEBEL ALI FREE ZONE DUBAI UAE

TEL: +971 4 8159 300

www.daikinmea.com

Complaints or contestations sent later than 10 days after the delivery date shall not be taken into consideration.
The manufacturer shall accept no liability for any damages discovered after the acceptance of the machine.

To request any technical information always quote the serial number of the AIR FILTRATION UNIT indicated on the data plate.
On receipt of the machine, carry out the following checks to protect your rights should the machine be incomplete (with parts missing) or if the machine has been damaged during transport:

a) Before accepting the machine, check for any damages.

b) If the machine has been damaged, do not remove the damaged materials. A series of photographs will be helpful in ascertaining responsibility.

c) Inform the carrier immediately of the scope of the damage and request the same to inspect the machine immediately.

d) Inform the dealer immediately of the scope of the damage to allow the same to arrange for the necessary repairs. Under no circumstances may a machine be repaired unless it a representative of the transport company has inspected it.

PURPOSE OF THIS MANUAL

The purpose of this manual is to allow the installer and the operator to carry out all operations and maintenance necessary to guarantee correct installation and maintenance of the machine without risking any damage to persons, animals, the environment and/or property.

THIS MANUAL IS AN ESSENTIAL GUIDE OF THE UNIT AND MUST BE KEPT FOR ITS ENTIRE LIFETIME.

All personnel appointed to run, maintain, or supervise the unit must read this manual. The operator appointed to carry out maintenance and repairs on the unit or to regulate the same must be a skilled person with adequate and recognized professional qualifications for the relative operations.

MANUFACTURER DETAILS

DAIKIN MIDDLE EAST & AFRICA FZE

P.O. BOX 18674

JEBEL ALI FREE ZONE DUBAI UAE

TEL: +971 4 8159 300

www.daikinmea.com

Daikin guarantees that the AIR FILTRATION UNIT supplied

- is complete and conforms to the Packing List.
- is delivered together with Installation, Operation and Maintenance Manual.

If the unit is not complete or does not conform to the packing list, or if the manual is missing, please contact the Daikin sales network, quoting the specific data of the unit indicated on the name plate affixed to a wall of the unit. An example of a name plate is shown below:

Identification

DAIKIN

AHU/AIR FILTRATION UNIT					
MODEL	DAFU -1000	SERIAL NO.	DAME-2021-001	DATE	March-21

TECHNICAL DATA	
NORMAL AIR FLOW	1000 CFM
MOTOR CAPACITY / FLA	500 W/ 2.22Amps
FAN RPM	1950 min
POWER SUPPLY (Volt / Phase / Hertz)	240~200V 1PH 60/50 HZ

START UP
Before start up, carefully read the IOM check:
1) Fan Rotation
2) The current input must not exceed the values mentioned above

DAIKIN MIDDLE EAST AND AFRICA FZE

P.O. Box 18674 Jebel Ali Free Zone, Dubai, UAE

MADE IN UAE

For basic unit specification, kindly refer to the data on the nameplate affixed outside the unit like the represented figure above which will provide the following unit specifications:

1) Manufacturer's name and address
2) Size and serial number of the unit
3) Date of manufacture
4) Nominal Air flow
5) Main supply voltage
6) Frequency
7) Number of phases
8) Motor Power & FLA

Further information, relative to both construction and performance, is given in the specific product catalogue and technical features, which is part of this manual.

USE OF THE UNIT

DAIKIN AIR FILTRATION UNIT is used to remove impurities in air in Residential, Commercial, and Industrial environments.

INSTALLATION

The user/ installer is responsible for ensuring that the unit is installed to guarantee the static and dynamic stability of the same. All works must be carried out in compliance with national legislation on safety in the workplace.

The user or installer must ensure that atmospheric conditions cannot prejudice the safety of persons or property during installation or use.

Daikin shall accept no liability whatsoever in the following cases:

- Incorrect installation or installation not carried out according to the procedures, partial or total failure to comply with the instructions
- Incorrect electricity / hydraulic / compressed air supply
- Incorrect use of the unit
- Lack of maintenance
- Unauthorised modifications or repairs
- Use of non-original or unsuitable spare parts

QUALIFICATION REQUIRED FOR THE USE AND MAINTENANCE OF THE UNIT

GENERAL OPERATOR

- Authorised to operate the unit through the speed controller and switches on the unit.
- He/she may only switch the unit on and off and carry out command operations.
- Be fully acquainted with danger and warning signals.
- Fully understand the functioning cycle of the unit, and therefore have carried out theoretical- practical training, operating under the direct guidance of an expert operator or user of the unit, or under the direct guidance of one of the manufacturer's technicians.

MAINTENANCE MECHANIC

- Authorised to carry out maintenance, regulation, replacement, and repair operations on mechanical parts.
- He/she must be a skilled mechanic and able to carry out mechanical maintenance in a satisfactory and safe manner.
- Not authorised to carry out any operations on the electrical system.

MAINTENANE ELECTRICIAN

- Authorised to carry out electrical operations for regulation, maintenance, and repairs.
- Authorisedto work when voltage is present inside electrical panels and derivation boxes.
- He/she must be a skilled electronic/electrical technician, therefore able to carry out.
- Electrical/electronic maintenance in a satisfactory and safe manner, with theoretical preparation and proven experience.
- Not authorised to carry out mechanical operations.

MANUFACTURER'S TECHNICIAN

- Authorised to carry out complex operations in any situation.
- He/she works in accordance with the user.

SAFETY WARNING

Daikin wishes to point out the safe conditions for the operator while working on the unit.

Before operating on the unit, users or installers must have read all the provisions contained in this manual.
Before use, check and ensure that all the protective devices are installed and functioning.

- Read carefully all the safety messages in the manual and on the unit.
- The operator must have received instruction on the function of the safety devices installed, and on their correct use.
- The operator must wear safety clothes suitable for the type of work.
- The operating area surrounding the unit, must be free of obstacles and clean.
- Do not use unauthorized or improvised instruments to gain access to parts of the unit that are usually inaccessible.
- Do not use the unit in an environment where there is a risk of explosion unless specified in the instruction manual.
- Do not attempt to carry out repairs or adjustments on the unit unless expressly authorized and qualified.
- Before carrying out repairs or other operations on the unit, always communicate your intentions in a loud voice to the other operators in the vicinity of the unit, and check that they have heard and understood your warning.
- After carrying out an adjustment under reduced safety conditions, the unit must be restored to its previous state with all the protective devices activated as soon as possible.
- Every operation on the system or on the electrical appliances must be carried out only by a Qualified Maintenance Electrician.
- Always switch off voltage to the electrical panel before opening the electrical panel.
- When an operator finds a defect, especially if this affects safety, he/she must inform the person in charge.
- Regulation operations carried out under reduced safety conditions, must be carried out by ONE PERSON ONLY. While he/she is performing the operation, access to the unit to unauthorized persons must be prevented.
- Always adopt maximum caution and do not allow unqualified persons to operate on the unit or in the vicinity of the same.
- It is FORBIDDEN to carry out any type of repair, maintenance, or adjustment on the unit while it is running, unless this is expressly indicated in these instructions.
- It is FORBIDDEN to allow the unit to function automatically if the fixed or mobile guards have been removed.
- It is FORBIDDEN to modify or tamper with the safety devices installed.

WARRANTY

Daikin warranties that the unit has no material or processing defects at the time of manufacturing. The warranty covers a period of 12 months from delivery, except for consumables (filters, UV lamp etc).

At the moment of the delivery, the unit must be scrupulously examined to ascertain that it conforms to the data of the packing list and that the shipment is complete and corresponds to the order. Check carefully that no damages have occurred. Any damages must be immediately reported to the carrier, raising the opportune reserves. The plate indicating the general features must be checked before unloading to discover any discordance. Daikin will not recognize damages reported after acceptance of the delivery.

Complaints for defects that could not be detected at the moment of delivery must be reported to Daikin Middle East & Africa FZE in writing and forwarded by registered post. Otherwise, they shall not be taken into consideration.

If Daikin recognizes the existence of a defect, it undertakes to replace the defective parts, with the express exclusion of any other claim proposed by the customer.

The warranty does not cover problems deriving from/created by the connections to electricity or compressed air systems or other external facilities connected to the unit.

Defects due to the following are also excluded from the guarantee:

- Incorrect operating and failure to observe the maintenance provisions.
- Normal wear and tear

The warranty shall be null and void if the unit is incorrectly used or used above the performance limits for which it has been designed. In the event of any modification of, or tampering with the unit, especially the safety devices, the warranty shall be immediately null and void and the manufacturer shall be relieved of any responsibility whatsoever. No compensation for damages will be recognized for disruption of business activities due to the system being stopped during the execution of maintenance or repairs, whether performed under warranty or for a charge.

Daikin declines all liability, present and future, for damages to persons, property or the machine itself, deriving from negligence on the part of the operators, failure to respect the installation, use and maintenance instructions given in this manual, or failure to comply with the safety rulings in force for the protection of the system and of the qualified personnel appointed to use and maintain the same. The serial number, indicated on the unit, is the primary reference for the identification of the product and for any requirements, whatsoever.

ENVIRONMENTAL CONDITIONS

The unit has been designed for use in indoor applications. However, the unit cannot operate in environments where explosives are present, where there is a high presence of dust, where there is a high percentage of humidity or high temperatures, unless manufactured explicitly by request for such environments.

ENVIRONMENTAL CONTAMINATION

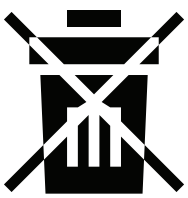
The unit has been designed to operate without problems in the most varied types of environment and sectors. Depending on the operating sector of installation, and the sector of use, the specific rulings must be complied with, and all necessary company procedures must be implemented to avoid problems of an environmental type (a system which operates in a hospital may present different problems that a system operating in other sectors, from the point of view of the disposal of consumption parts, filters, etc. For example, the former could present bacteriological-type problems.) The customer is responsible for instructing and training workers in the procedures and behavior to be adopted.

NOISE

The unit has been designed and constructed in such a way as to prevent risks due to the emission of aerial noise exceeding the lower limit of 80 dB(A). It must be noted that every environment has its own acoustic features, which may have considerable influence on the sound pressure issued by the unit when functioning. Therefore, it is necessary to consider the noise data supplied as a reference base, while the buyer-user is responsible for carrying out specific photometric tests in the place of installation and under the real usage conditions of the unit.

DISPOSAL AND DEMOLITION

For the disposal of packaging, user or installer must comply with the laws and regulations in force.
When the unit is being put out of service, or for the demolition and disposal of the unit, or of any single part of the same, the buyer-user must comply with the laws and regulations of his/her own country.



TECHNICAL FEATURES & SPECIFICATION

Daikin's air filtration unit is equipped with 3-stage filtration including 99.99% efficient HEPA filters. It is a portable air filtration unit, with nominal 1000 CFM, designed to serve small to medium-sized facilities like in healthcare, to quickly and inexpensively convert standard patient rooms to negative pressure isolation rooms. It also helps any conditioned space eliminate airborne infections by acting as a recirculating device that provides equivalent outdoor air changes (ACH).

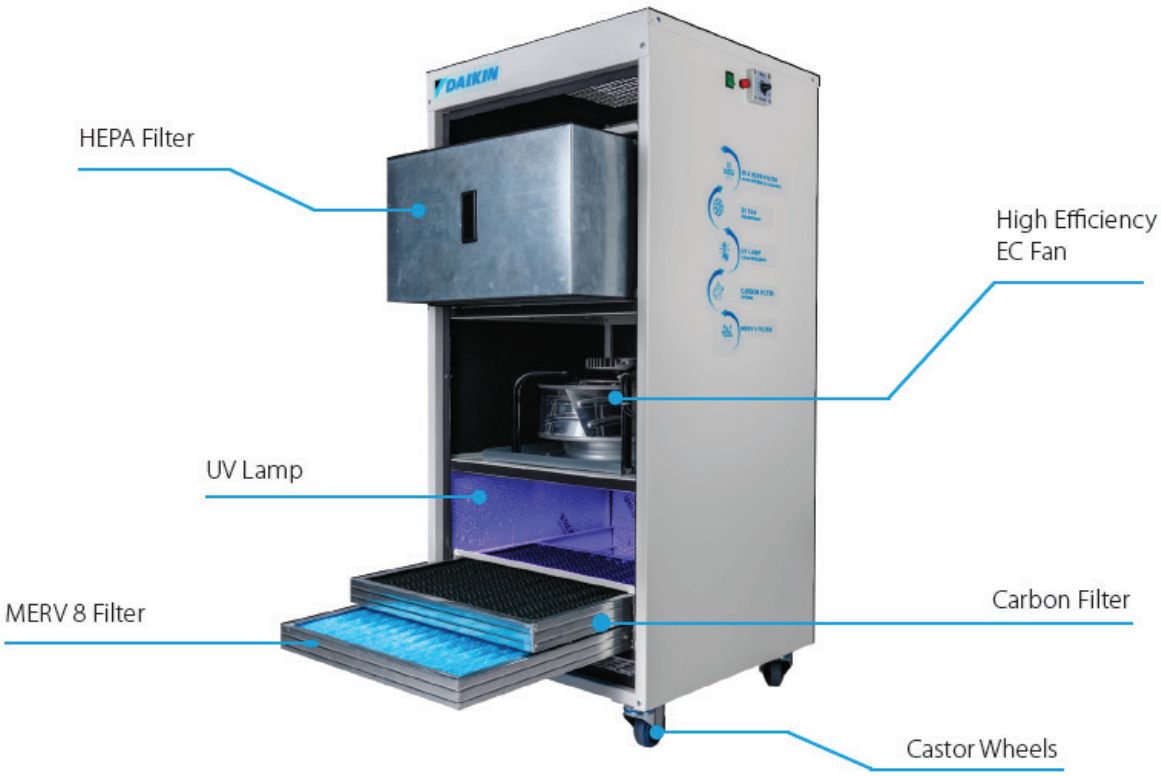
The air filtration unit can be operated in any of the following modes:

1. 100% Exhaust
2. 100% Recirculating

This powerful unit is equipped with an EC Fan that has variable speed control and can deliver airflow from 300 CFM to 1000 CFM. The EC Fan ensures lower sound levels and high efficiency.

PRODUCT HIGHLIGHTS

- Compact Vertical Design with Footprint 0.35 m2
- Casing 1.0 mm thick prepainted galvanized steel in RAL 9002 smooth finish
- Nominal Airflow 1000 CFM, able to provide 12 ACH in Rooms up to 5000 cubic feet
- Casing insulated with acoustic insulation
- 3 stages filtration with UV lamp
- HEPA filter auto scan tested as per EN 1822
- Indication lights for unit running and HEPA filter dirty warning



MEGApleat MERV 8 Filter

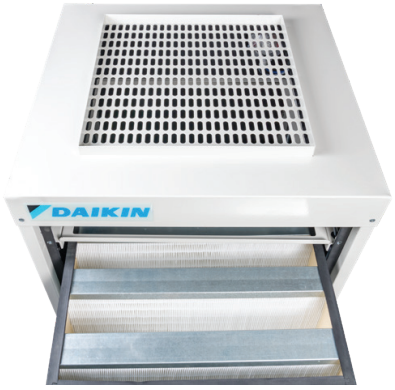
- Highest dust holding capacity (DHC) - longest life of the filter
- Highest breach strength - strongest construction
- Heavy-duty, galvanized expanded metal support grid
- Lowest lifecycle pressure drops - reduction in energy consumption
- UL classified

AmAir®/C Carbon Filter (Optional)

- Economical solution to many gaseous contaminant problems including odors
- Pleated panel filters made with activated carbon media
- Minimum efficiency reporting value MERV 7
- UL Classified

UV Lamp

- High output UV lamp (254 nm) to inactivate virus, bacteria and fungi



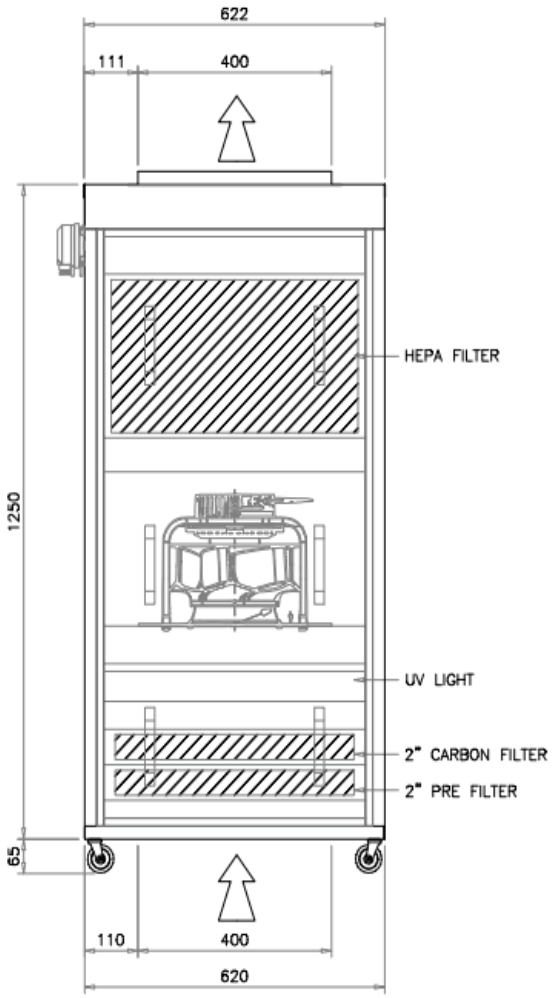
AstroCel III HEPA filters

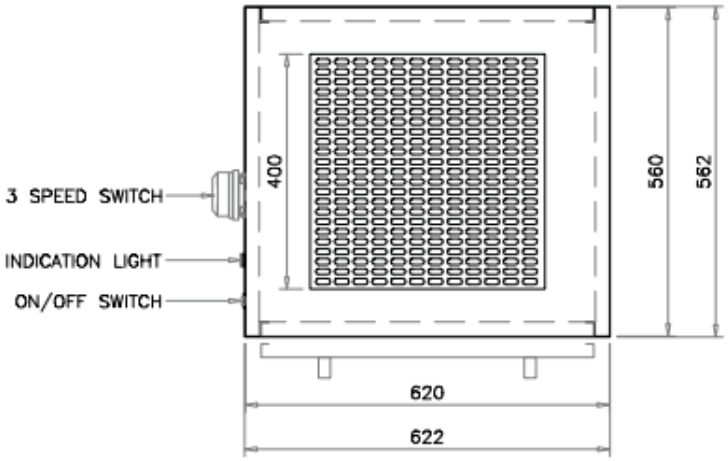
- H14 HEPA Filters, 99.95% efficiency @ 0.3 micron
- Large media area and low resistance to reduce operating costs
- Chemical-resistant anodized aluminum frame provides superior strength
- UL Classified

High Efficiency EC Fan

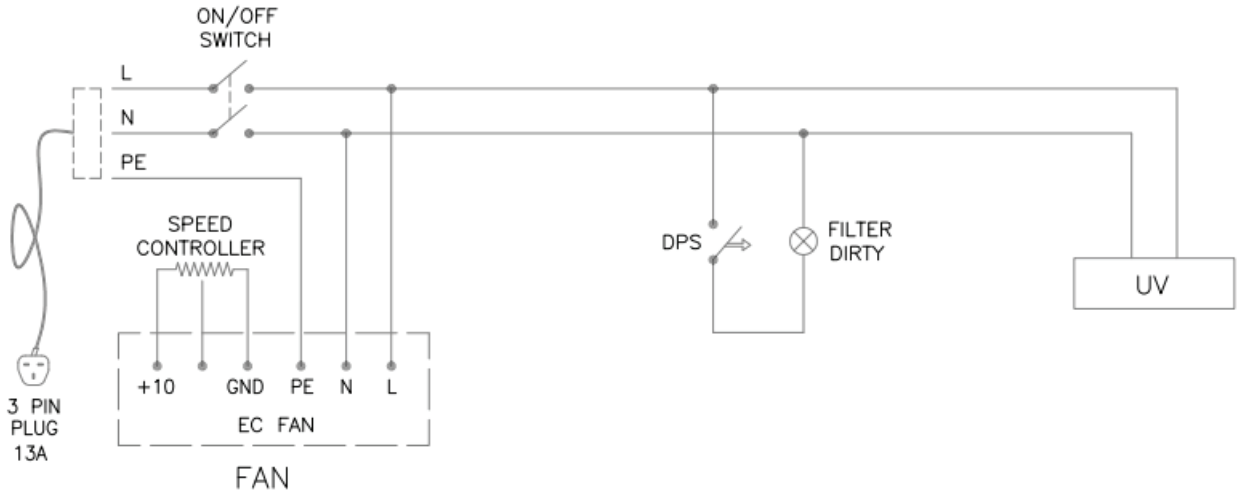
- Electronically commutated EC technology motor is coupled on direct driven fan
- High-efficiency backward curved impeller made of aluminum blades
- High-efficiency EC motor, IP 44 rating
- Low-noise emissions
- Long service life

DIMENSIONAL DRAWING





ELECTRICAL WIRING



ROUTINE MAINTENANCE

Please note that routine maintenance will give:

- Greater efficiency; therefore, lower running costs Longer
- duration; therefore, lower repair costs

BEFORE CARRYING OUT ANY MAINTENANCE OPERATION ON THE UNIT, IT MUST BE DISCONNECTED FROM THE ELECTRICITY.

Examining the unit

- First, check if the fan is not running and spinning.
- Check for any damaged or broken cables.
- Ensure that casters are locked properly and tightly (Figure 3).
- If the HEPA filter is clogged, then the red light will switch on, meaning that the HEPA filter needs to be changed (Figure 2).
- Check that the unit is running without any excessive vibration or different noises.
- Check that the unit inlet and discharge safety grates are free from any particles (Figure 4).

Figure 2
Unit On/Off, Dirty Filter and Speed Control

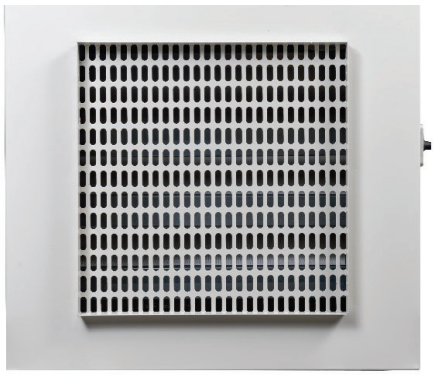


Figure 4
Unit Discharge safety grates

Figure 3
Caster Wheels

NON-ROUTINE MAINTENANCE

Access to Internal Components

1. Make sure that the unit is disconnected from the power supply.
2. Check that the fan is not running and spinning.
3. Using Allen key, unscrew the screws on the unit's front panel (Figure 5) and then carefully remove the panel.

Figure 5
Front Panel

MERV8 PRE Filter

Usually, the pre-filter is installed in the lower position and is recommended to be changed every 2-3 months, or as required for better performance. For checking or replacement, follow guidelines below.

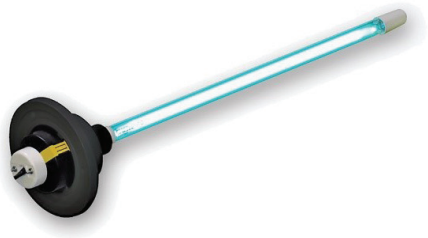
1. Make sure the unit is disconnected from power supply.
2. Fan is not running, and it is not spinning.
3. Filter can be easily accessed by removing the front panel (Refer Access to internal components and Figure 5)
4. Filters are easily removable by pulling out the filter from the mounting frame. (Figure 1)
5. Check the filter for damage, contamination, moisture, and odours.
6. Examine the filter frame and filter cabin for any contamination moisture or any dust particles, clean with dry cloth.
7. Slide out the contaminated filter, put in the bin bag and dispose properly.
8. Do not touch or damage the filter media when inserting the new filters. Hold the filter by the media frame to avoid damage.

Carbon filter (Optional)

Usually, the pre-filter is installed in the lower position and is recommended to be changed every 2-3 months, or as required for better performance. For checking or replacement, follow guidelines below.

1. Make sure the unit is disconnected from power supply.
2. Fan is not running and spinning.
3. Filter can be easily accessed by removing the front panel (Refer Access to internal components and Figure 5)
4. Filters are easily removable by pulling out the filter from the mounting frame. (Figure 1)
5. Examine the filter for damage, contamination, moisture, and odours.
6. Examine the filter frame and filter cabin for any contamination moisture or any dust particles, clean with dry cloth.
7. Slide out the contaminated filter and put in the bin bag and dispose properly.
8. Do not touch or damage the filter media when inserting the new filters. Hold the filter by the media frame to avoid damage.

UV Light



1. Make sure the unit is disconnected from power supply.
2. Fan is not running and spinning.
3. UV lamp can be accessed by removing the front panel. (Refer Access to internal components and Figure 5)
4. Maintain lamps free of dust that diminishes the potency of ultraviolet emissions by wiping them every 2-3 months with a clean cloth.
5. Avoid touching UV lamp surfaces. Fingerprints contain oil that diminishes UV output and may cause the lamp to heat unevenly.

HEPA Filter

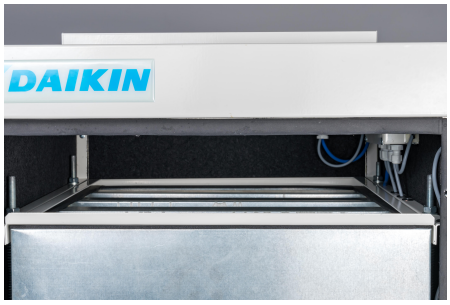


Figure 6

Figure 7

1. Make sure the unit is disconnected from power supply.
2. Fan is not running and spinning.
3. Filter can be easily accessed by removing the front panel (Refer Access to internal components and Figure 5).
4. Loosen the four spring type nuts and bolts on the HEPA filter frame. After loosening the nuts, the frame will move upward, and filter can be easily slide out. (Figure 7 & 6).
5. Examine the filter frame and filter cabin for any contamination moisture or any dust particles. Clean with dry cloth.
6. Slide out the contaminated filter, put in the bin bag and dispose properly.
7. Do not touch or damage the filter media when inserting the new filters. Hold the filter by the media frame to avoid damage.
8. For inserting HEPA filter in the frame, make sure that the spring-type nuts are loose, then insert filter and tighten the four nuts of the spring bolts from top of the filter.

EC FAN

Figure 8

1. Make sure the unit is disconnected from power supply.
2. Fan is not running and spinning.
3. Fans can be easily accessed by removing the front panel. (Refer Access to internal components and Figure 2)
4. Remove the cables connected to the fan power and control area.
5. EC Fan are spider-mounted on four bolts and nuts for easy removal. (Figure 8)
6. Loosen the four nuts on the fan frame. Lift the fan up and then pull out the fan.

TROUBLESHOOTING

DESCRIPTION	CAUSE	SOLUTION
Unit Not Running	Unit is not switched on	Switch on the unit from on/off switch. (Figure 2)
	No Voltage	Disconnect the main plug, check the plug and connect the cable. Check supply voltage.
Unit output too High/ too low	Air flow rate too high or too low	Adjust the airflow rate using the speed controller. (Figure 2)
Red Indication light on	Dirty HEPA Filter	Change the HEPA filter. If the issue persists, contact the manufacturer's service representative.
Unusual Sound and Unit Vibration	Access panel not properly closed	Close the access panel properly. (Check Non-Routine Maintenance Section)
	Dirty Filter	Check if the filters are clogged and replace it if necessary. (Check Non-Routine Maintenance section)
	Fan or bearing issue	Switch off the unit and contact manufacturer's service representative.

SERVICE CONTACTS

ACTIVITY	UAE / NEAR EAST / GCC / AFRICA	SAUDI ARABIA	EGYPT
Service	service@daikinmea.com	service@daikin-ksa.com	service@daikinegypt.com
Parts	parts@daikinmea.com	parts@daikin-ksa.com	service@daikinegypt.com
Warranty	warranty@daikinmea.com	warranty@daikin-ksa.com	service@daikinegypt.com
Technical Support	techresponse@daikinmea.com	techresponse@daikinmea.com	techresponse@daikinmea.com
Service Phone	600546641 (only locally in UAE)	800 111 0909 (only local in KSA)	0225263164 (only local in Egypt)

www.daikinmea.com

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