

# ELIXAIR E416 & E1250 DUCT FILTER

## OPERATION AND MAINTENANCE MANUAL



# ELIXAIR DUCT FILTER

ELIXAIR duct filter is based on the most effective known indoor air purification method. The device is efficient, requires little maintenance and is very easy to use. Elixair duct filter is economical to use as it does not need expensive replacement filters. Elixair's air cleaning efficiency is maintained throughout the service interval. The filter in the device will not get clogged, which means the amount of air flowing through the unit will remain constant. Elixair duct filter's capacity far exceeds the air purification capacity of any commercial ventilation unit.

## 1. OPERATION OF ELIXAIR

Outdoor and indoor air impurities primarily consist of tiny airborne particles such as soot, smoke, pollen, animal dust, spores of mold or rot fungus, etc. Some of the particles are visible but the greater part of them are so small they are invisible to the naked eye. The smallest particles, however, are the most harmful as they may cause various allergic reactions and diseases when inhaled.

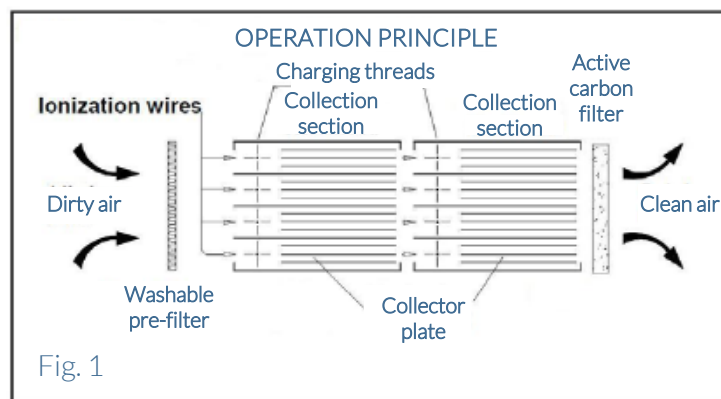
The smaller the particles, the longer they remain suspended in the air. Therefore, the indoor air should be cleaned thoroughly.

ELIXAIR duct filter clears airborne particles from the indoor air very quickly. In addition, the active carbon filter in the air purifier removes a significant amount of harmful gases and odors that enter the building with the outdoor air.

ELIXAIR duct filter operates as follows (see Fig. 1):

- The ventilation system fan draws the air through the duct filter.
- Hairs, fibers and other large particles remain in the prefilter.

- Most airborne particles are so small that they are not caught by the prefilter. Instead, they continue to the ionization section of the electronic 2-phase filter cell, in which they receive a powerful electric charge (8 kV).
- The charged particles travel in the airstream to the collection section of the cell and are drawn to the aluminum collector plates as a result of an electric field (4 kV). The particles cling to the plates and remain there until the cell is washed.
- The remaining gaseous impurities, such as odors, are removed by an active carbon filter that is a standard replacement component of the appliance.



## 2. PLACEMENT AND INSTALLATION OF ELIXAIR DUCT FILTER

The best result is achieved by placing the device in conjunction with mechanical ventilation: both in the fresh air duct and in the room air recirculation duct (if the ventilation system has one). Note the following when placing the device:

- Install the device in a room where it cannot be exposed to moisture (e.g. rain).
- Install the device so that the service door is not facing down—all other installation orientations are possible.
- Observe the device's space requirement and the space required by the service door when opened.

### DIMENSIONS OF THE DUCT FILTERS

#### DUCT FILTER E416

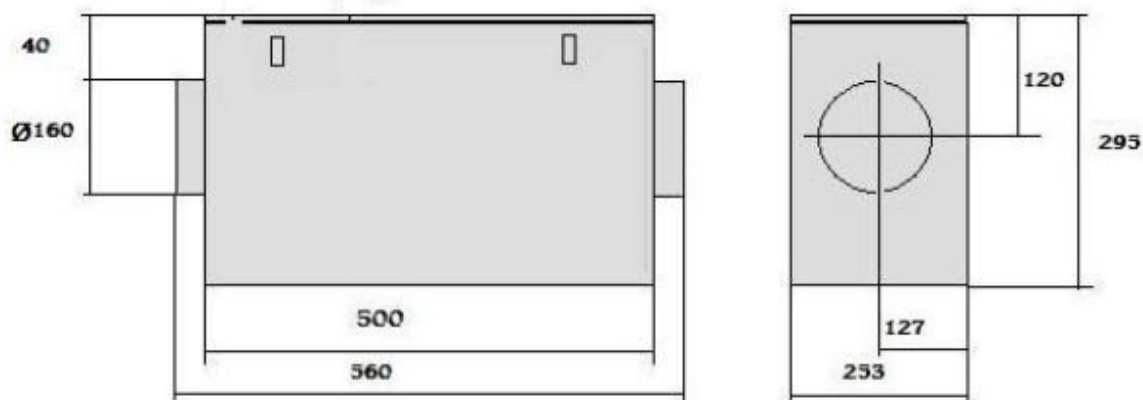


Fig. 2

## DUCT FILTER E1250

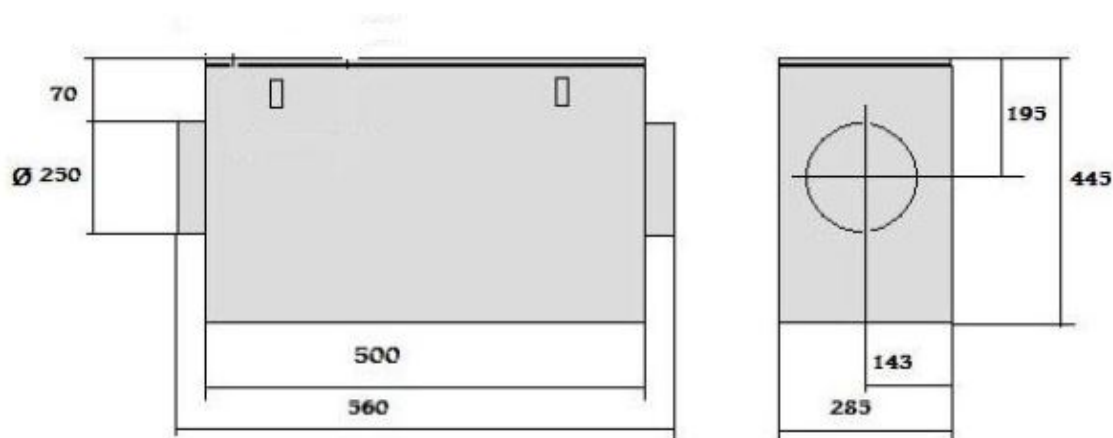


Fig. 3

### 3. CHOOSING THE RIGHT DUCT FILTER

Choose the duct filter to match the amount of air to be cleaned. The maximum air volume for Elixair E416 is 400 m<sup>3</sup>/h and for E1250, 1,000 m<sup>3</sup>/h. Never use an undersized duct filter. The more slowly the air flows through the electrostatic precipitator, the better it works.

### 4. DUCT FILTER PERFORMANCE

The electrostatic filtering technology used in the duct filter combines the following revolutionary features:

- The efficiency of the electrostatic filter matches that of HEPA class filters.
- The electrostatic filter does not become clogged.
- The pressure loss of the electrostatic filter is negligible.
- The electrostatic filter's cleaning performance stays constant regardless of whether the filter is clean or dirty.
- The energy consumption of the electrostatic filter is negligible.

## 5. DEPLOYMENT OF ELIXAIR DUCT FILTER

Check the following before connecting the unit to the mains:

- When switched on, the duct filter must be at room temperature. If the unit is brought inside from a cold place, the temperature inside the unit must be allowed to even out before use.
- Open the service door. Remove the plastic cover around the active carbon filter.
- Insert the filter and close the service door.
- Connect the duct filter unit to a grounded 230V/50Hz wall socket.
- Operate the 2-way switch to turn on the duct filter unit (Fig. 4).
  - The green indicator light next to the switch is lit when the duct filter unit is operating.

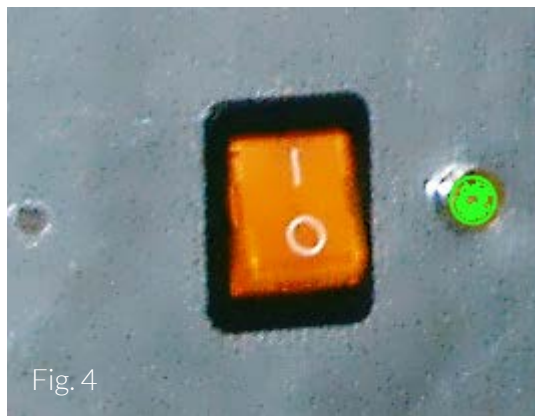


Fig. 4



## 6. DUCT FILTER CONSTRUCTION

Elixair duct filter components (Fig. 5)

- A. Prefilter
- B. Electrostatic collector cell 1
- C. Electrostatic collector cell 2
- D. Active carbon filter
- E. Safety switch (cuts off power when service door is opened)
- F. Pipe connection (160 mm or 250 mm)
- G. Power switch
- H. Locking hooks (2)
- I. Direction of airflow

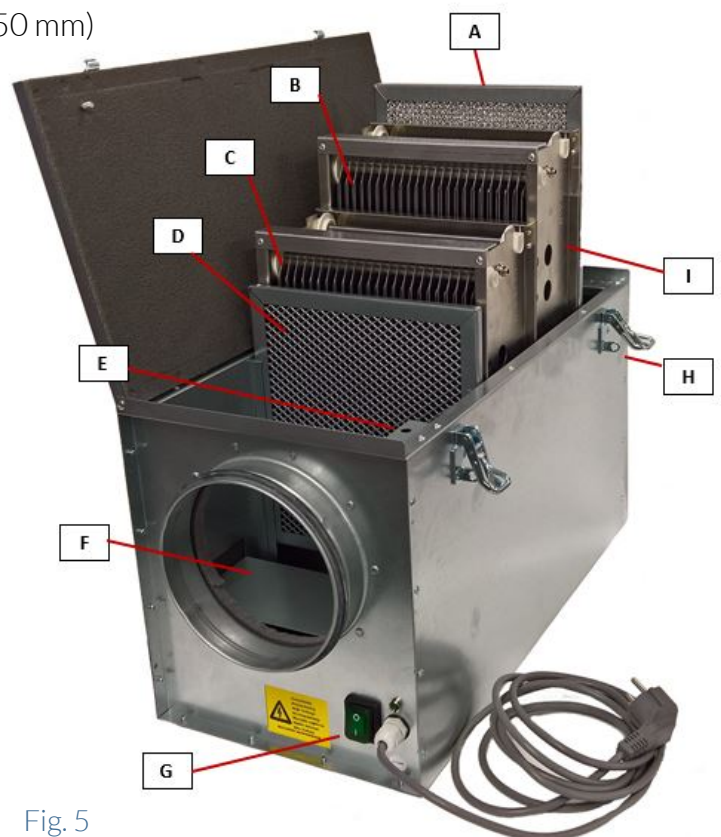


Fig. 5

## 7. GOOD TO KNOW

- It is important to note that in addition to using the duct filter, ordinary ventilation is necessary to bring in oxygen and to remove from the indoor air carbon dioxide and any harmful gases released from processes and structures that the active carbon filter is not able to remove.
- The duct filter is designed for continuous use.
- The duct filter should be maintained regularly to avoid malfunction.
- The serviceable components are the prefilter, collector cell and active carbon filter.
- The prefilter and collector cell are to be washed periodically and need not be replaced.
- The active carbon filter is disposable and cannot be washed or reactivated.
  - The active carbon filter should be replaced as necessary.
  - If the unit is not used for the elimination of odors, the active carbon filter need not be used.
- The light in the 2-way power switch tells you that the device is electrically connected.
- The indicator light next to the power switch is indicative of the operation of the filter unit.
  - If the indicator light flashes or is off, the filter unit is not functioning. In that case, make sure the collector cells are clean and undamaged. If the problem persists, please contact an authorized Elixair service centre.



## 8. ELIXAIR DUCT FILTER MAINTENANCE

The maintenance interval of Elixair duct filter depends on the amount of dirt accumulated in the filter. The prefilter and the collector cell must be washed at the latest when snapping sounds can repeatedly be heard from the cell and the green indicator light goes off from time to time.

If the indicator light is flashing or goes completely off, the cell is short-circuiting as it is too dirty to function. If use of the device is resumed, serious damage may result.

### NOTE!

Handle the electronic collector cell carefully. The metal edges may be sharp. We recommend washing the cell in a dish washer.

## WASHING IN A DISH WASHER

In addition to the washing methods described below, the prefilter and collector cells can also be washed in a dish washer. The dish washer may be an industrial heavy-duty machine or a household appliance. Use a normal washing programme. An ultrasonic cleaner can also be used. Make sure the washing liquid used has a high pH value (alkaline). After washing, allow the cell to dry well or dry it with compressed air, for example.

## DETERGENT

To clean the filters, use ELIXAIR cell detergent.

## CLEANING THE UNIT

1. Turn the power switch to position 0, disconnect the power plug from the wall socket and wait for one minute to allow the high voltage in the cells to discharge.
2. Open the service door of the unit by unlocking the two locking hooks and lift the door up.
3. Remove the prefilter, collector cells and active carbon filter.
4. Vacuum any fluff from inside the unit. Wipe surfaces with a damp cloth. You can use any suitable household detergent.
5. The prefilter can be cleaned by vacuuming or by washing it with water. If the filter is very dirty, you can wash it using a dishwashing liquid suitable for hand washing of dishes.

## WASHING THE FILTERS

### SPRAY WASH

#### WARNING!

Take care not to get cleaning solution in the eyes and avoid prolonged contact with skin (see the cell detergent safety data sheet that is available at [www.elixair.fi](http://www.elixair.fi) or via email: [info@elixair.fi](mailto:info@elixair.fi)).

1. Spray the cell with warm water using, for example, a hand shower (Fig. 6) over a floor drain or in a tub or sink.
2. Spray ELIXAIR cell cleaning liquid on the filter cell plates. (Fig. 7).
3. Allow the detergent to work for about 5 to 15 minutes.
4. Rinse thoroughly with warm water (Figure 6).
5. Check also that the ends of the collector plates are clean. Repeat cleaning if necessary.
6. Leave the cell to dry in a well ventilated place for at least 24 hours. You can turn the cell upside down a few times to speed up drying.
  - a. You can also use compressed air for drying. However, do not apply compressed air directly to the collector plates or other parts. The parts may bend and be damaged.
  - b. Install the prefilter and active carbon filter and close the service door. This allows you to use the ventilation system until the electrostatic precipitators are dry.
7. After the wash, clean the ionization wires carefully with a scouring pad or with a thin plastic strip with a slit cut into it (Figure 8). Dirty ionization wires cause fizzing and crackling sounds and affect the performance of the air purifier.

WARNING! The edges of the collector plates may be sharp..

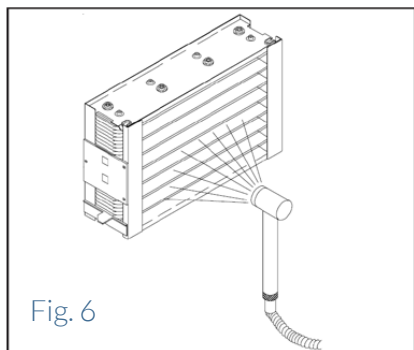


Fig. 6

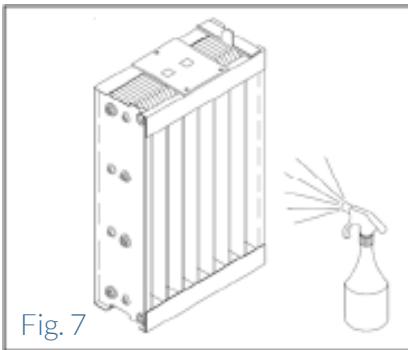


Fig. 7

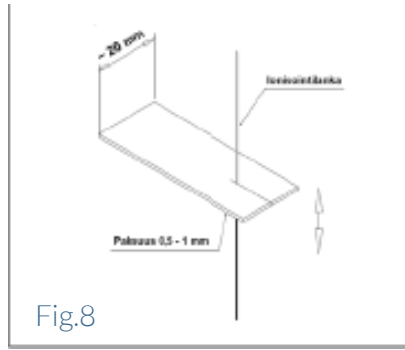


Fig. 8

## INSERTING THE FILTERS

NOTE! Ensure that the collector cell and the prefilter are dry. A wet cell can cause a short circuit and damage the unit.

1. Place the prefilter in its groove.
2. Install the collector cells in the unit so that the arrow on the side of the cell, indicating the direction of airflow, is parallel with the airflow direction arrow on the duct filter housing and the cell contact plate faces its counterpart in the purifier housing at the bottom of the duct filter (Figure 3, item H).
3. Check the active carbon filter and replace if necessary. Do not forget to remove the plastic wrapping of the new filter before installing it.
4. Close and lock the duct filter service door.
5. Power on the unit (plug it in and apply the power switch).
6. When the green light is lit, the unit is functioning correctly. If the light is blinking or off, the cell is probably still wet. Turn off power and allow the cell to dry. If the cell is dry but emits snapping sounds after washing, make sure the ends of the collector cell are clean. Check that the collecting plates of the cell have not been bent or damaged during the wash. Malfunctioning can also be caused by a broken ionization wire. Did you clean the ionization wires? Dirty wires cause crackling and hissing sounds. Bent cell plates must be straightened and broken ionization wires replaced. Wires can be purchased from authorized Elixair service dealers. They can also replace the wires. A list of authorized Elixair service dealers in Finland can be found, for example, at our website [www.elixair.fi](http://www.elixair.fi).
7. Mark the purifier wash dates, to facilitate a regular maintenance schedule for the duct filter.
8. Cell detergents and filters are available from retailers and authorized Elixair service shops. A safety data sheet for the cell detergent can be obtained either via email [myynti@elixair.fi](mailto:myynti@elixair.fi) or at [www.elixair.fi](http://www.elixair.fi).

## 9. TEKNISET TIEDOT

MODEL	E416	E1250
ENERGY CONSUMPTION (W)	3	4
HEIGHT (mm)	295	450
WIDTH (mm)	250	285
DEPTH (mm)	500	500
WEIGHT (kg)	10	19
AIR VOLUME (m³/h)	400	1000
PIPE DIAMETER (mm)	160	250

## 10. WARRANTY

Elixair air purifiers come with a warranty of one year from the purchase date. The manufacturer is not liable for normal wear, mechanical damage or damage caused by improper use and cleaning. The warranty does not cover any indirect damage. No repairs will be undertaken under the warranty without a receipt of purchase indicating the date of purchase. All warranted repairs shall be carried out by an authorized Elixair service shop.

## 11. CORRECT DISPOSAL OF THIS PRODUCT

### (WASTE ELECTRICAL AND ELECTRONIC EQUIPMENT)

This marking shown on the product or its literature indicates that it should not be disposed of with other household waste at the end of its working life. To prevent possible harm to the environment or human health from uncontrolled waste disposal, please separate this from other types of waste and recycle it responsibly to promote the sustainable reuse of material resources.

Household users should contact either the retailer where they purchased this product or their government office for details of where and how they can take this item for environmentally-safe recycling. Business users should contact their supplier and check the terms and conditions of the purchase contract. This product should not be mixed with other commercial waste for disposal.

## 12. SAFETY INSTRUCTIONS

- Use the unit indoors only.
- Do not use or store the unit in a place where it can get wet. Do not pour water on the unit or expose it to rain. Do not operate the unit when it is wet.
- Do not place the unit in direct sunlight or in an environment with a temperature in excess of 60 °C.
- Do not place or store the unit in a place where it might fall over.
- The unit is not designed to be used in rooms lacking normal ventilation. Ensure sufficient ventilation.
- Do not use the unit if it is damaged.
- Do not use the unit if its power cord or power plug is damaged. Return the unit to an Elixair service center for inspection and repair.
- To prevent damage to the power cord, do not wrap the cord around the unit and do not place the power cord on a hot surface.
- Only plug the unit into a grounded mains socket.
- To disconnect the unit, first switch off the unit and then unplug the power cord.
- Disconnect the unit from the socket before moving or transporting it.
- Do not cover the air intake openings. Do not place objects on top of the unit.



- Do not drop or insert objects into the holes of the unit.
- Lock the service door when placing the unit in a room accessible to children or pets.
- The unit may only be serviced by an authorized service center.
- Never use the appliance in a place where flammable gases or liquids or large amounts of dust may combine with air to form an explosive mixture.

Use this air purifier only in accordance with the operating instructions. Do not use accessories or supplies not used or recommended by Elixair Oy.

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