

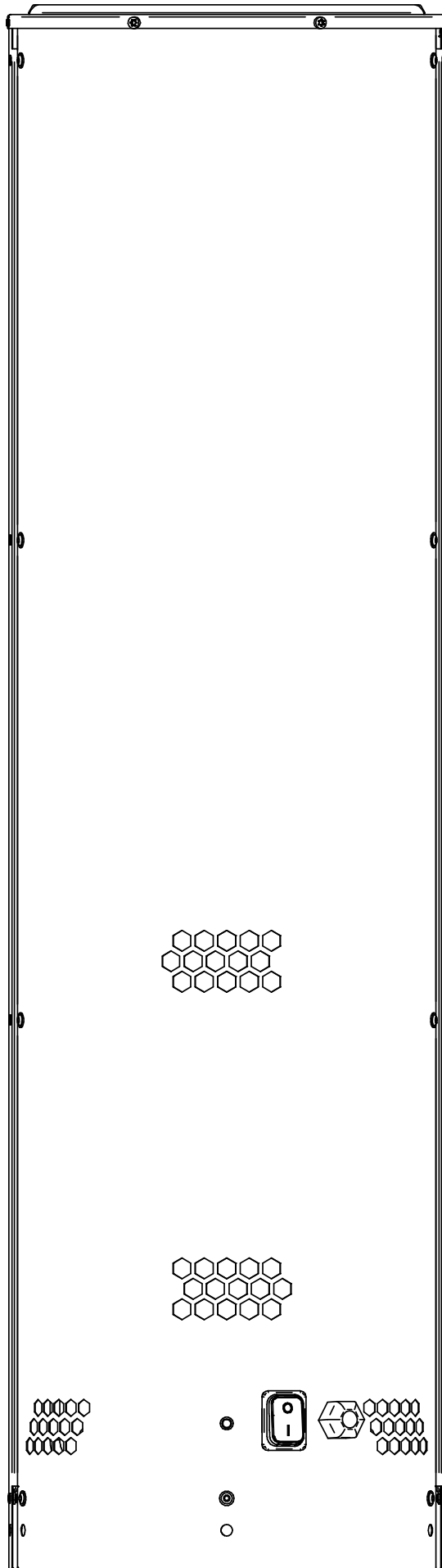
Electrostatic Particle Filter

ESP-10



UK | Read and save these instructions!

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Your energy. Optimized.



Particle Filter | ESP-10

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How to use this manual

This manual has been prepared based on the specific product and contains relevant technical information and installations guides.

Accessories and spare parts are not covered by this manual. Please refer to the individual manuals of these components.

This installation manual does not contain any system design documentation.

Failure to observe instructions marked with a danger symbol may result in personal injury and/or damage to the product.

Errors and omissions excepted.



Disposal

Electrical and electronic equipment (EEE) often contain materials, components and substances that may harm the environment or be hazardous to your health. Products (WEEE) marked with the 'crossed-out wheeled bin' symbol should be disposed of separately from other waste at the end of its life. Though legislation may differ from country to country we strongly advise that electrical and electronic waste is separated from other waste and disposed of according to national legislation to protect the environment and personnel that may come into contact with waste.

Symbols

The following symbols may be used in the manual to draw attention to danger or risk of personal injury or damage to the product.



General prohibition

Failure to observe instructions marked with the prohibited symbol may result in extreme danger or serious personal injury.



General attention

Marks a dangerous situation that, in the worst-case scenario, can cause serious personal injury or significant damage to the product.



General warning

Failure to observe instructions marked with a danger symbol may result in personal injury and/or damage to the product.



Electricity hazard/High Voltage

Marks a situation in which caution is advised due to the risk of high voltage electric shock which can cause serious personal injury or significant damage to the product.



Connect an earth terminal to the ground

Failure to observe instructions marked with a danger symbol may result in personal injury and/or damage to the product.



Permitted and approved

Permitted and approved method of installation.



Prohibited and not approved

Prohibited and not approved method of installation.



Warning

To minimise the risk of fire, electric shock, personal injury and/or damage to the product please observe the following:

- Please always read the manual and only use the product in accordance with the manufacturer's instructions. If in doubt, contact one of the Exodraft specialized dealers.
- All installations must be carried out by properly qualified personnel in accordance with national legislation and regulations.
- This product must be earthed. Get assistance from an qualified electrician when in doubt.
- The chimney fan must always remain switched on when the fireplace is in use.
- Exodraft recommends that the chimney fan is switched on at least once every three months, to avoid long periods of stagnation for the mechanical parts.
- Ensure that the chimney has been swept before mounting the fan to avoid chimney fire
- The product must be accessible for service and maintenance.
- Prior to servicing the product, disconnect the power supply to the filter. Turn off the main switch located on the filter. Ensure that the heat source and the filter cannot be turned on accidentally. Let the filter cool down before service or cleaning.
- Automatic power on/off function; when the temperature in the chimney increases, high voltage automatically switches on. Touching the electrode or the electrode holder may be fatal.
- Exodraft always recommends the use of a smoke alarm when a solid fuel fireplace is installed.
- If the Exodraft fan system has been designed for solid fuel/multi fuel installations, please ensure that the design meets the requirements of BS EN15287-1. If this cannot be achieved, a smoke alarm must be installed in the same room as the heat appliance.
- Undesirable stoking practice may result in problems, such as excessive soot accumulation, chimney fires, etc., which may damage the product.

Product description

An Exodraft ESP-10 particle filter is designed as an electrostatic precipitator with a built-in chimney fan for mounting on top of the chimney. The filter is equipped with a self-cleaning function (patented) and designed to reduce the emissions from wood-burning appliances as well as facilitate easier lighting and refueling.

The ESP-10 comes with an integrated isolation switch and a 5-metre cable with open wires for plug installation.

The filter is designed for closed wood-burning fireplaces (stoves) with a nominal heat output of maximum 10 kW.

Incorrect firing may result in problems with soot, chimney fires, etc. which might damage the product. Please check out this site for advice about lighting and maintaining a fire:

www.exodraft.com

Scope of supply

- ESP-10 with 5-metre connection cable (with open wires)
- Installation manual and user instructions
- Labels for chimney sweep, indicating that power to the filter must be cut off before cleaning the chimney to be placed at fireplace and cleaning locations.

A mounting adapter for mounting the Exodraft ESP-10 on the chimney must be ordered separately to fit the existing chimney system.

Accessories and spare parts

The table below shows the accessories and spare parts available for the ESP-10-models.

Accessories*	Spare parts
Adapters (for steel and brick chimneys)	Fan motor
Flanges (for brick chimneys)	Cleaning motor
Rainshield (steel or black)	Electrode
	Insulator
	Controller

*This manual does not describe the specific use of accessories. We refer to the separate manuals for such components.

For more details contact your Exodraft dealer.

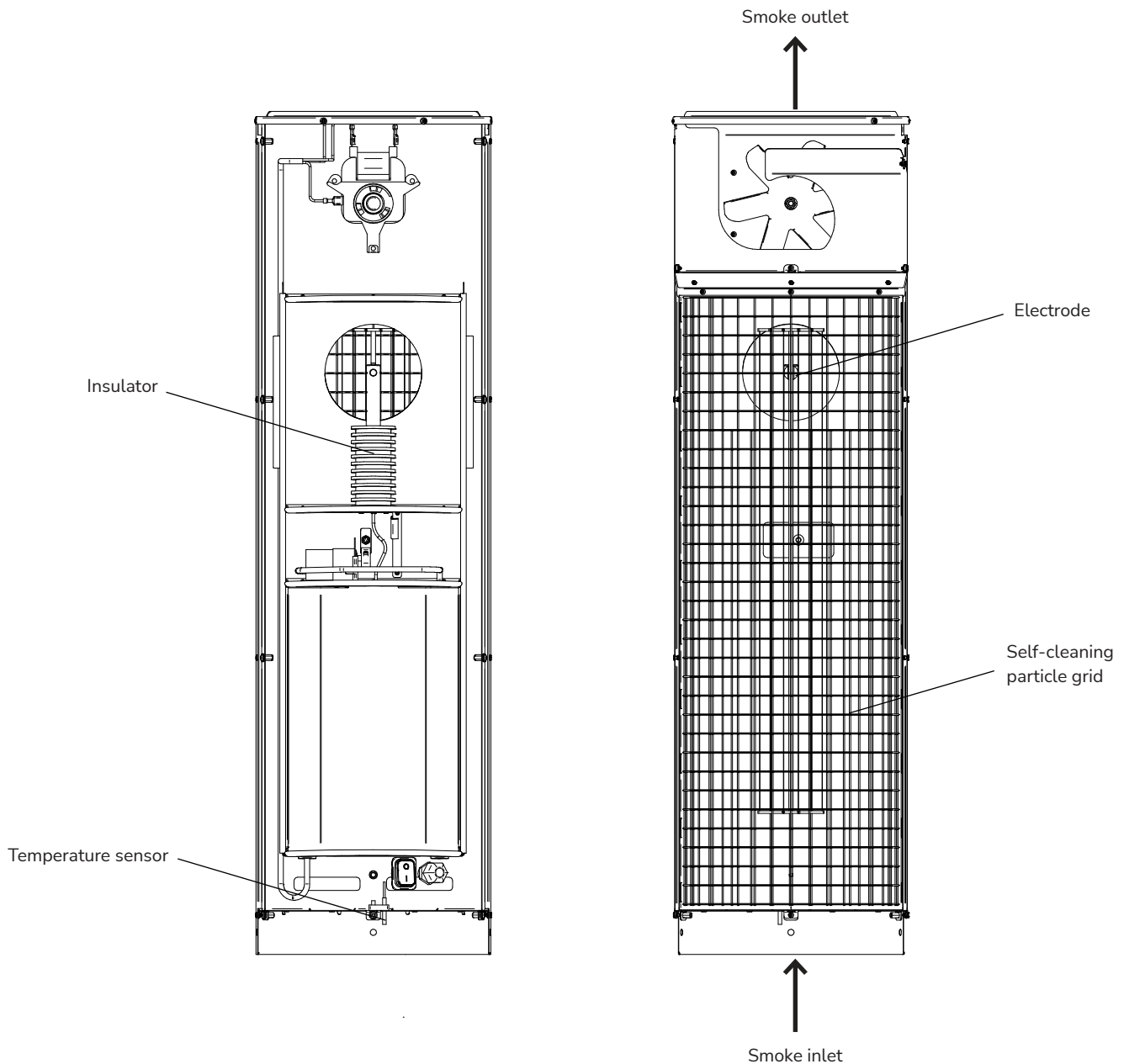
Functionality of the electrostatic precipitator

The Exodraft filter is an electrostatic precipitator. The filter reduces the number of fine and ultrafine particles in a flue gas flow by creating an electrostatic field between the charging electrode and the collection electrode.

The electrostatic field in the ESP-10 is generated by a charging electrode connected to a high voltage generator which ionizes the gas in its surroundings and as a result charges the particles and delivers an electrostatic field strong enough to push the charged particles towards a collection electrode.

While the electrostatic field is on, the precipitated particles will remain attached to the collection electrode. When the temperature and oxygen inside the filter is on a certain level, most of the attached particles will self-ignite and burn off in a complete combustion as a part of the normal operation.

The filter's self-cleaning functionality will remove the remaining particles inside the filter.



Automatic on/off

The Exodraft ESP-10 filter has a built-in temperature sensor that makes it possible to control the start and stop function automatically.

After the fireplace is lit, the ESP-10 filter will activate as soon as the temperature sensor records an increase in temperature. Depending on the chimney application, the start delay will be 10-30 seconds.

When no fuel is added to the wood stove, the chimney temperature will start to decrease. Once the temperature drops below 40 °C, the ESP-10 filter continues to operate for 30 minutes, after which sleep mode is engaged.



ATTENTION! When the fireplace and chimney are cold, it may, depending on relevant factors (stove model, chimney size, fuel type etc.), be necessary to turn the Exodraft ESP-10 filter off and then back on at the power supply to get the full benefit of the ventilators mechanical draft.

Self-cleaning function

The Exodraft ESP-10 filter is equipped with an automatic cleaning function that periodically cleans the filter during operation. The user may be able to hear the filter cleaning in some situations as the self-cleaning procedure is a mechanical movement inside the filter.

If the filter is restarted and the fireplace is cold, the automatic cleaning process will run for 3-5 seconds. When the fireplace is in use the cleaning procedure is initiated after 5 hours, only starting when the fireplace is being refueled.

Warranty

All Exodraft products are covered by a 2-year guarantee as per European consumer rights legislation. For some countries an extended period of guarantee may apply depending on either national legislation or other clearly stipulated conditions. Customer complaints must be handled by a specialised dealer or wholesaler (preferably where the Exodraft product has been bought originally). An updated list of Exodraft specialised dealers can be found on our website for the country in question.

Exodraft products must always be installed by properly qualified personnel. Exodraft reserves the right to change these guidelines without prior notice.

The warranty and liability does not cover instances regarding personal injury or damage to property or the product that can be ascribed to one or more of the following causes:

- Failure to follow this installation and operation manual
- Incorrect installation, start-up, maintenance or servicing
- Improper repairs
- Unauthorised structural modifications made to the product
- Installation of additional components that have not been tested/approved with the product
- Any damage resulting from continued use of the product despite an evident defect
- Failure to use original spareparts and accessories
- Failure to use the product as intended
- Exceeding or failure to meet the limit values in the technical data
- Force majeure

Technical specifications

The ESP-10 is designed for vertical discharge.

It is available in two colors: black painted stainless steel and brushed stainless steel.

The body and casing are manufactured in stainless steel.

All models can be opened for service and cleaning purposes.

The ESP-10 vane has been developed to solve draught problems by creating a mechanical draught on chimney, while the electrostatic precipitator filter reduces the number of fine and ultrafine particles in a flue gas flow.

The ESP-10 filter has been designed for closed wood-burning fireplaces and stoves with a nominal heat output of maximum 10 kW. The filter first reaches its full efficiency after 10-20 fires or burning of approx. 15-20 kg of firewood.

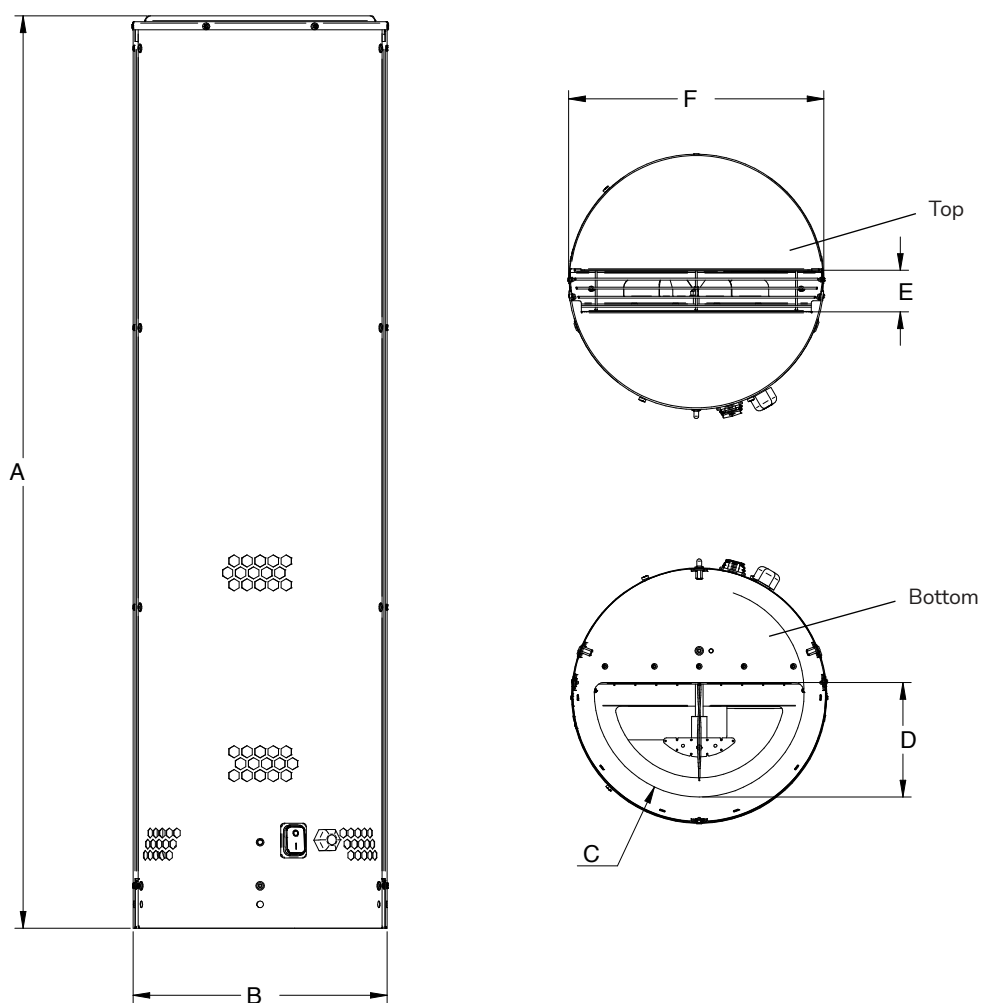
The ESP-10 filter can tolerate flue gas temperatures up to 400°C.

ESP-10 must **not** be mounted directly on the stove/fireplace. There must be at least 3 meters from the filter to the fireplace.

Technical data

Model	Motor specifications					
	V	Amp	Hz	Power consumption in use [W]	Power consumption standby [W]	High Voltage [kV/mA]*
ESP-10-STEEL	1 x 230	0.5	50	50-90	2	30 / 1.7
ESP-10-BLACK	1 x 230	0.5	50	50-90	2	30 / 1.7

*Power consumption at min. ambient temperature of -20 °C and max. ambient temperature of 45 °C.



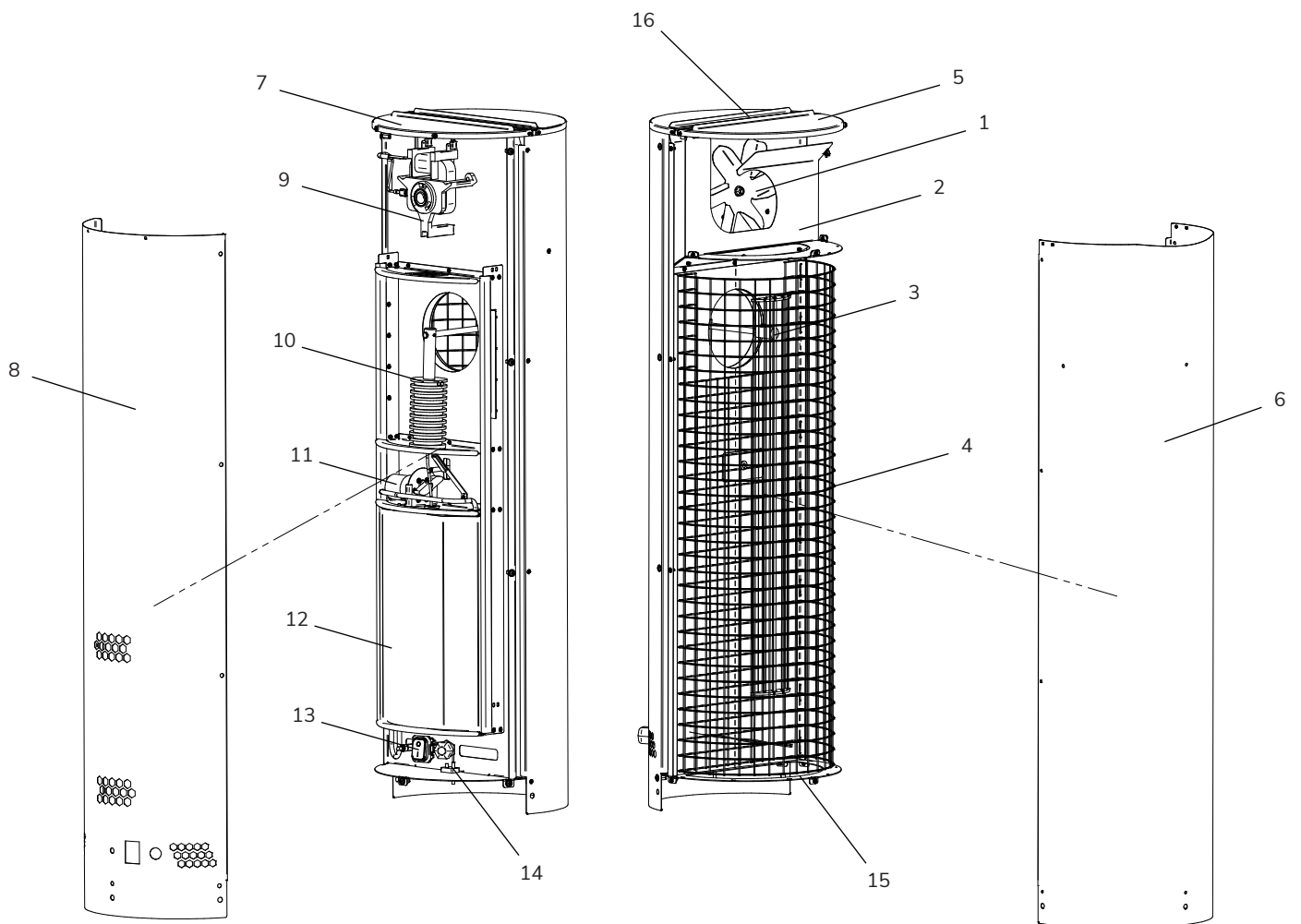
Model	Weight kg	Dimension [mm]						Testing done at
		A	B [Ø]	C [Ø]	D	E	F	
ESP-10-STEEL	14	957	267	220	120	44	267	DIBt: Z-7.4-3536
ESP-10-BLACK	14	957	267	220	120	44	267	DIBt: Z-7.4-3536

ESP-10 filter without adapter

Construction and components

1	Aluminium fan impeller
2	Fan inlet
3	Electrode
4	Self-cleaning particle grid
5	Lid (smoke gas side)
6	Cover (smoke gas side)
7	Lid (electronic side)
8	Cover (electronic side)

9	Fan motor
10	Insulator
11	Automatic cleaning motor
12	Controller
13	Main Switch
14	Temperature sensor
15	Inlet for smoke
16	Outlet for smoke



Precautions and user instructions

These instructions, applicable standards and relevant safety procedures from the manufacturer must be followed and at the same time the official provisions in force in the country, where the product is installed, must be observed.

Support system

Prior to installation of a chimney fan, it must be determined if the chimney can safely carry the weight of the particle filter.

A steel chimney should be well supported at the roof penetration point. If the chimney extends high above the roof, the chimney and the fan should be secured. The manufacturer's instructions must be followed.

Brick chimneys do not usually need any kind of support to carry the weight of the ESP-10.

System type

Fireplaces and wood stoves used in private dwellings normally operate in a relatively stable environment, where no major pressure fluctuations occur. However, to ensure an optimal firing, the particle filter is equipped with a vane, to create a constant draught in the chimney independently the weather outside and on the stage of the firing process.

Chimney type	Specifications				
	Fireplace performance range [kW]	Minimum size [mm]	Maximum size [mm]	Minimum distance for filter to flammable material [mm]	Minimum distance for filter to fireplace [m]
Steel (round)	2 – 10	Ø150	Ø250	500	3
Brick (square)	2 – 10	150 x 150	250 x 250	500	3

Precautions

Be aware

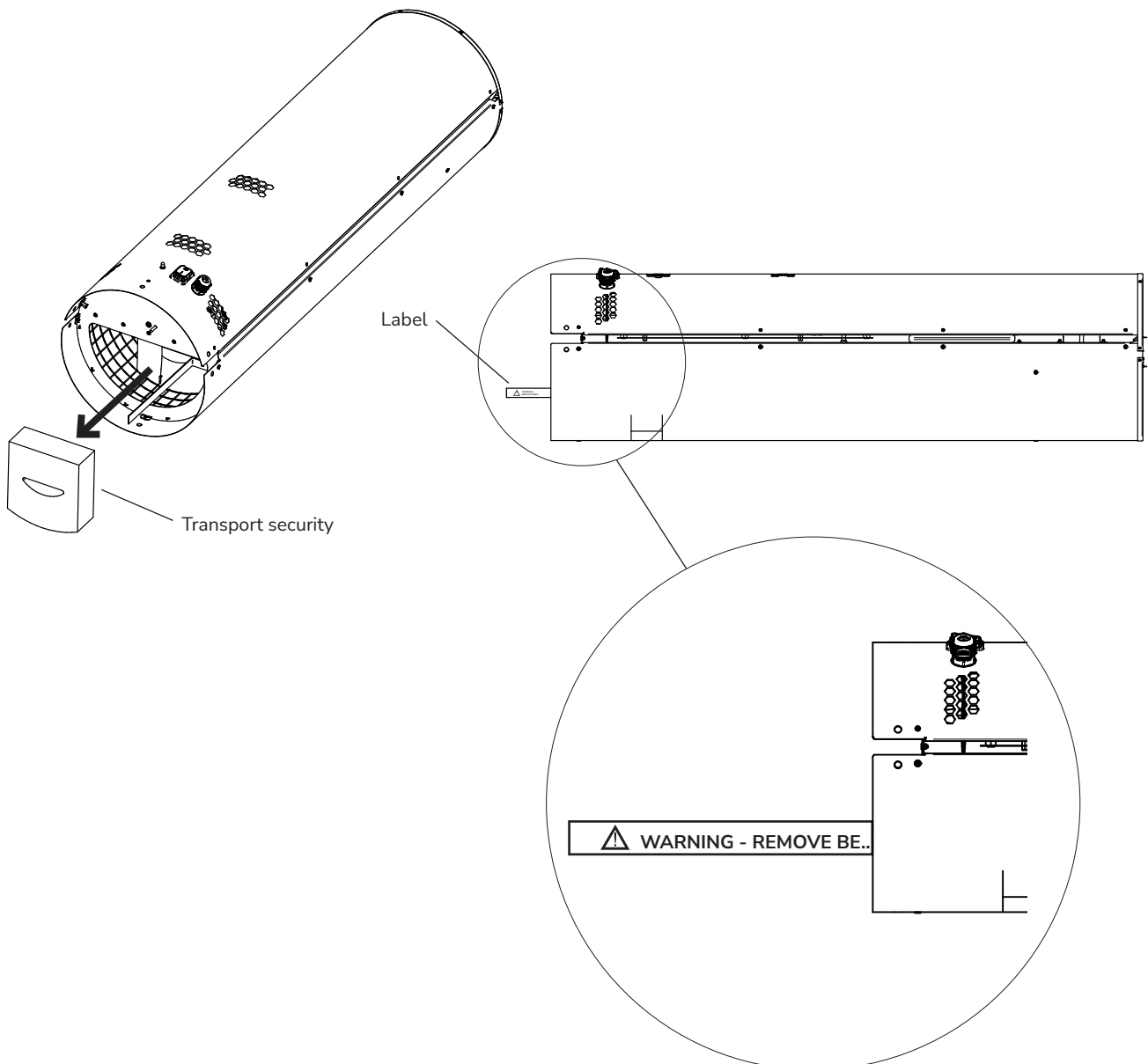
- that it must be installed on top of the chimney
- that it can be mounted on steel as well as brick chimneys
- that it must be mounted with the approved Exodraft accessories
- that the ESP-10 must always remain switched on when the fireplace is in use
- that it must be accessible for service and maintenance from the roof or from a ladder/cherry picker
- that the distance to flammable materials must be at least 500 mm
- that the isolation switch must be easily accessible

Mechanical installation

Exodraft products must always be installed by properly qualified personnel and according to the manufacturer's instructions.

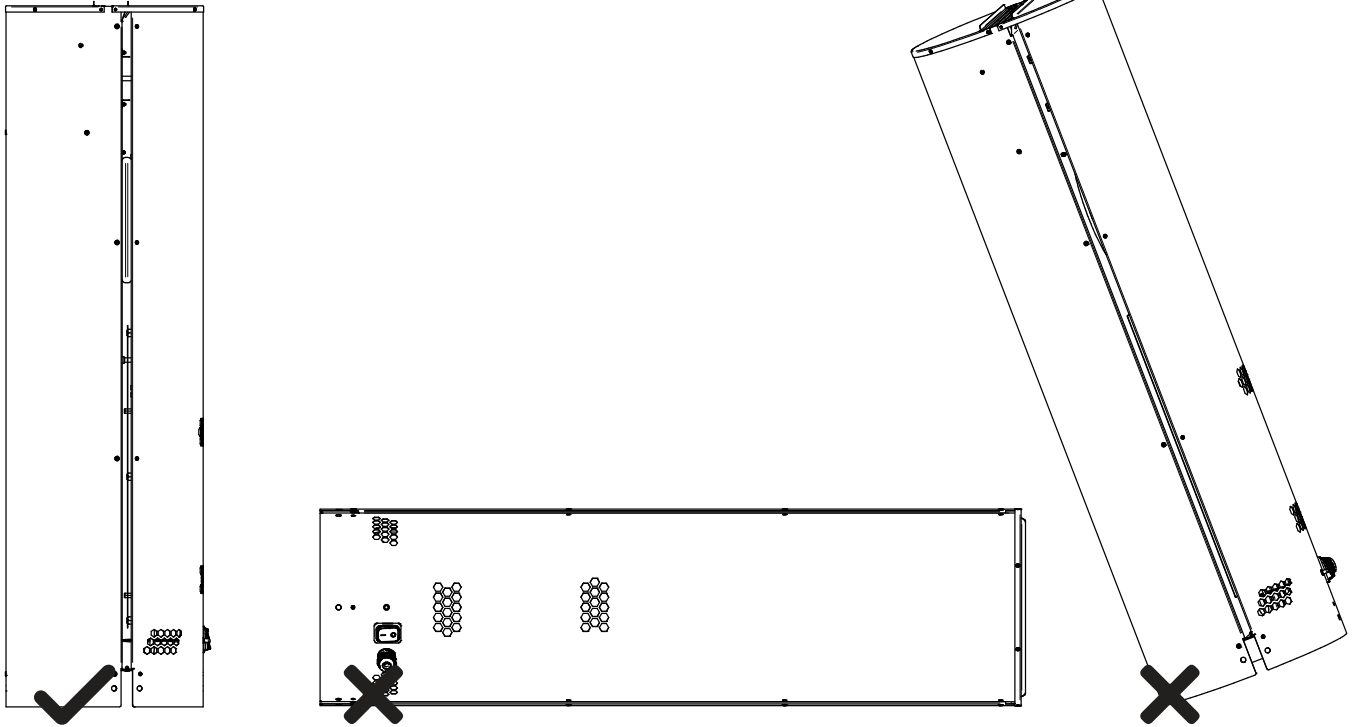
Transportation safety

Do not forget to remove the transport security in the bottom of the filter, protecting the electrode, before mounting the particle filter on the chimney.



Positioning of the particle filter

The particle filter can and must only be mounted vertically! Be aware of national law and building regulations!

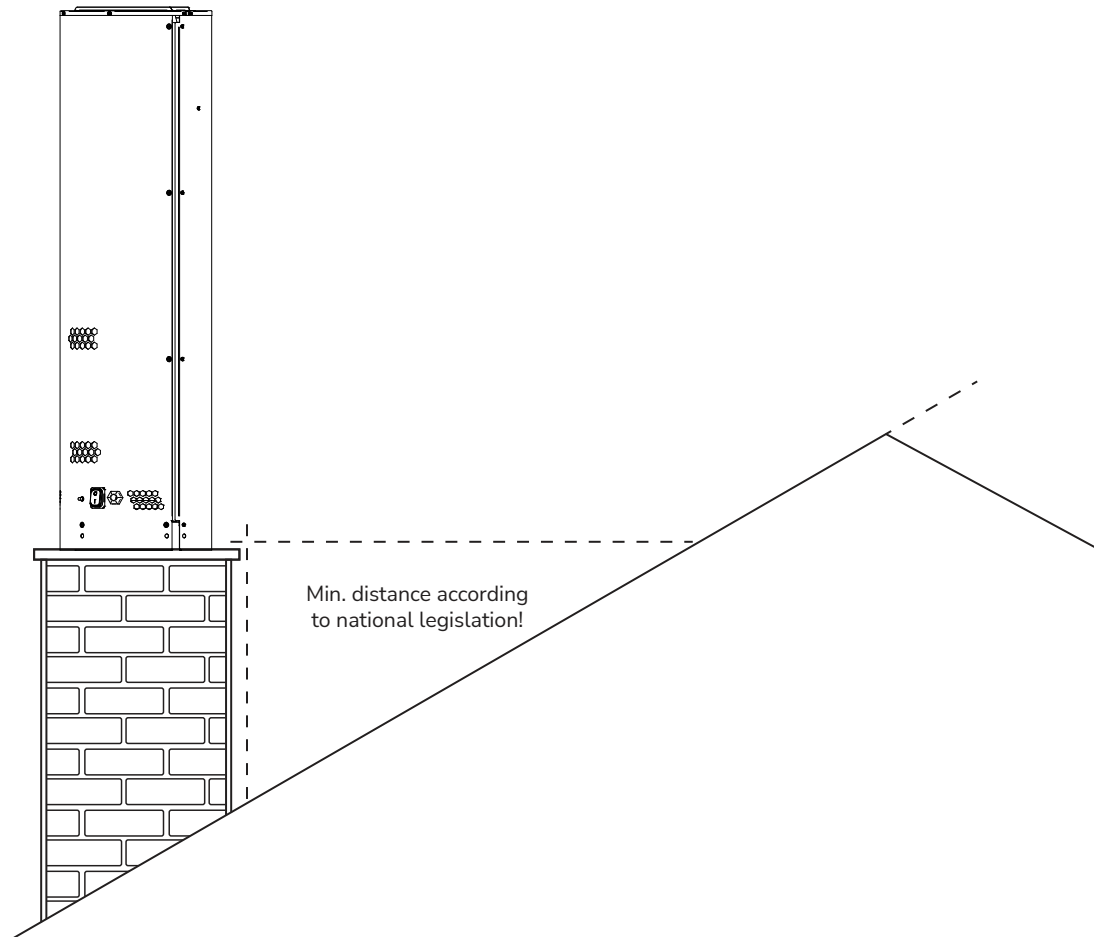


Minimum distance

The minimum distance to flammable materials must be at least 500 mm (national legislation must be observed)!



ATTENTION! The minimum distance for the particle filter to the fireplace must be at least 3 metres.



Before installation onto a chimney

Before the installation for the ESP-10, it must be ensured that the electrode and the temperature sensor are in the correct position. If the electrode or temperature sensor is out of its correct position, the particle filter will not function correctly.

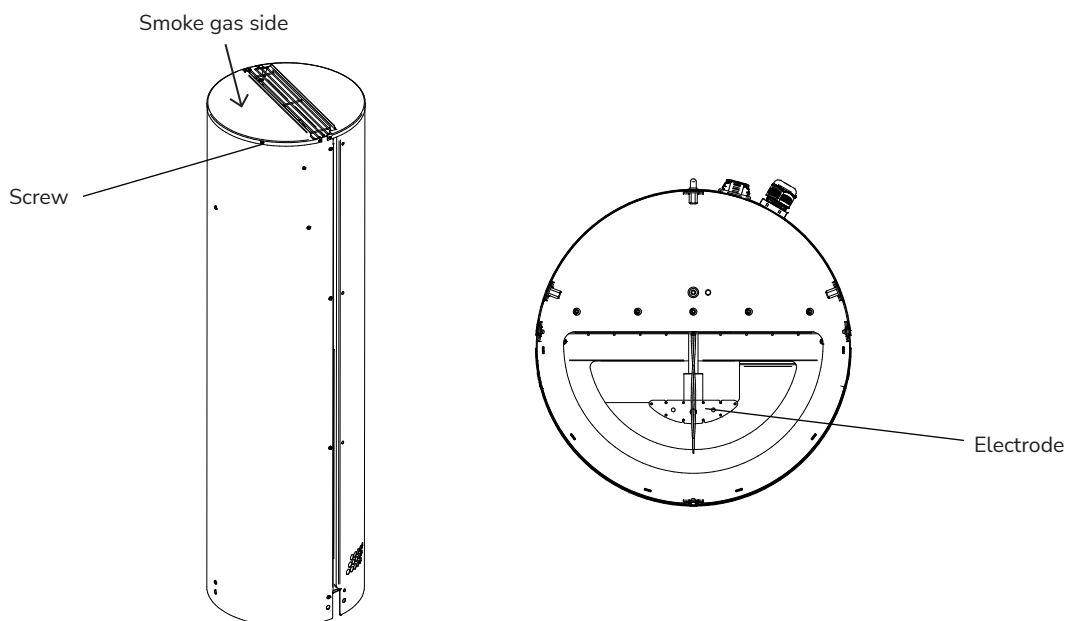


ATTENTION! The power supply must always be off, when the particle filter is being inspected or serviced.

Aligning the electrode

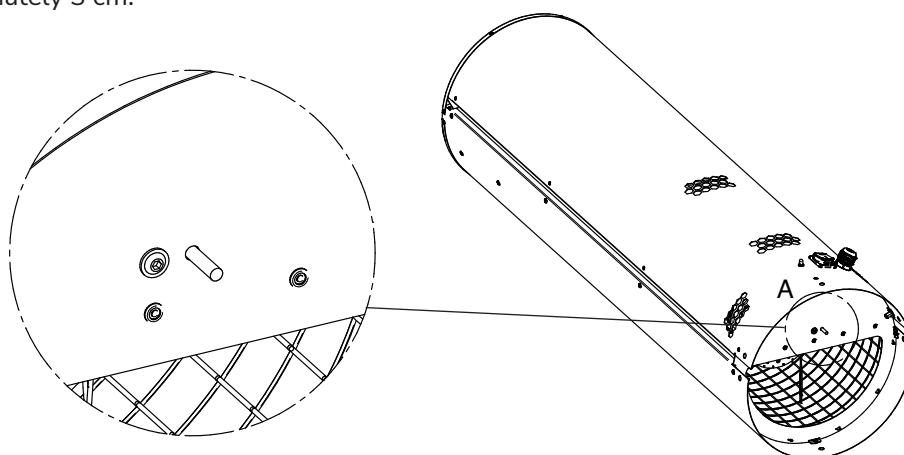
The ESP-10 comes with the charging electrode already installed. When installing the ESP-10, the charging electrode should hang straight down inside the smoke gas side.

The position of the electrode can be determined by removing the screw and open the lid on the top of the smoke side, look down into the filter and observe whether or not the electrode is hanging straight down inside the filter. Should the electrode not be aligned properly, please realign or replace the electrode.



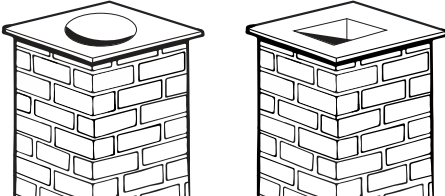
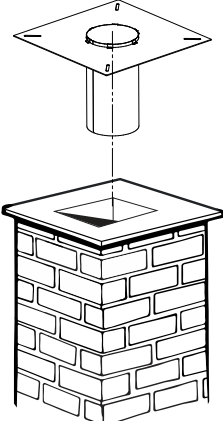
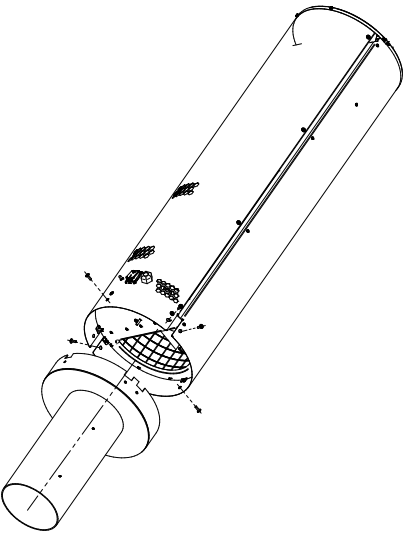
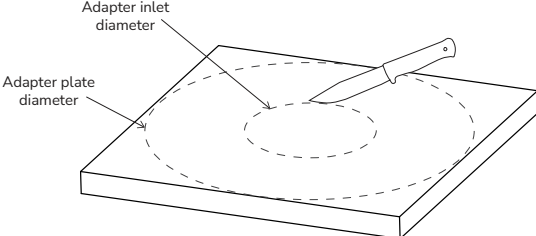
Temperature sensor position

Before mounting the ESP-10 filter on the chimney, please make sure that the temperature sensor is in position. The temperature sensor is located at the bottom of the filter and should be sticking out from bottom plate, approximately 3 cm.



Installation onto a brick chimney

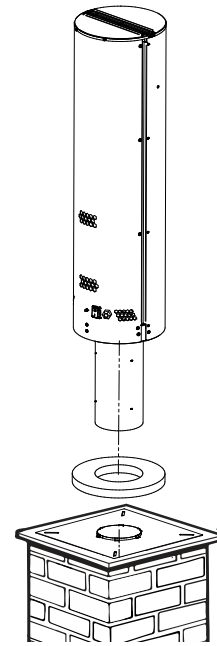
If the filter is to be fitted on a brick chimney, please use Exodraft accessories - the adapter and flange for ESP-10. See the installation guide below.

Step	Action	Illustration
1	Measure the inside diameter of the brick chimney, to choose the correct adapter and flange.	
2	Install the flange on the brick chimney, and fixate the flange to the chimney with some screws.	
3	Mount the adapter on the particle filter, with the supplied screws.	
4	Then cut a hole in the mineral wool mat that matches the adapter.	

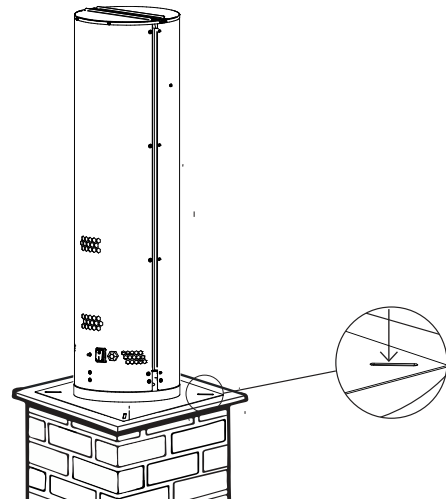
Mount the particle filter with adapter (and adapter-brackets*), on the mineral wool mat, on the chimney.

- 5 **Note! The brackets may be necessary if the filter wobbles.**
However, please note that the filter's adapter incl. fittings/brackets, must not sit in tension in the chimney pipe.

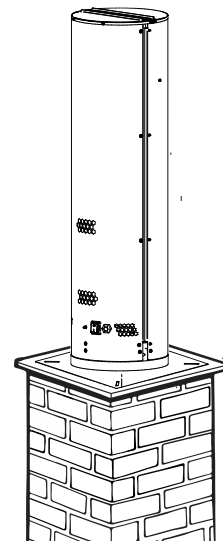
*See the guide for the mounting of the brackets.



- 6 To avoid rainwater from entering the flange - the slots and around the flange must be sealed with silicone.



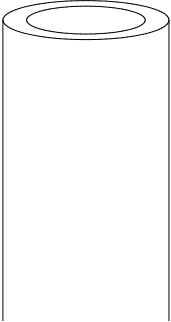
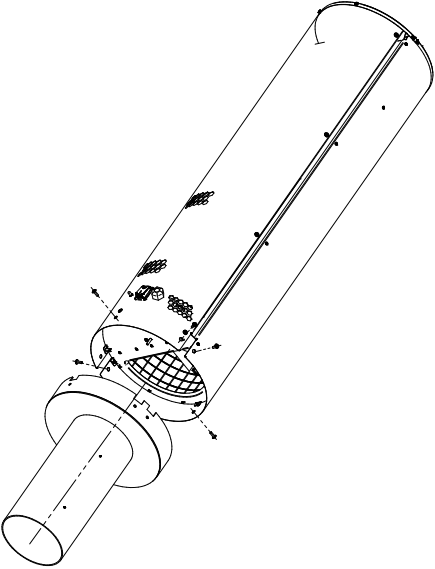
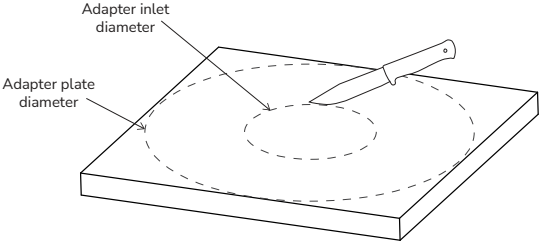
- 7 Connect the ESP-10 power cable to the power outlet and turn on the power switch on the filter.
 See the chapter **Electrical installation** for more information.



ATTENTION! The chimney sweeper must be made aware that the chimney is equipped with an ESP-10 filter!
 The supplied high voltage warning label must be attached to all inspection/cleaning hatches in the chimney system.

Installation onto a steel chimney

If the filter is to be fitted on a steel chimney, please use Exodraft accessories - the adapter for ESP-10. See the installation guide below.

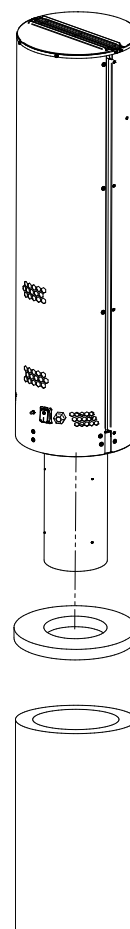
Step	Action	Illustration
1	Measure the inside diameter of the steel chimney, to choose the correct adapter for the particle filter.	
2	Mount the adapter on the particle filter, with the supplied screws.	
3	Then cut a hole in the mineral wool mat that matches the adapter.	

Mount the particle filter with adapter (and adapter-brackets*), on the mineral wool mat, on the chimney.

4

Note! The brackets may be necessary if the filters wobbles. However, please note that the filter's adapter incl. fittings/brackets, must not sit in tension in the chimney pipe.

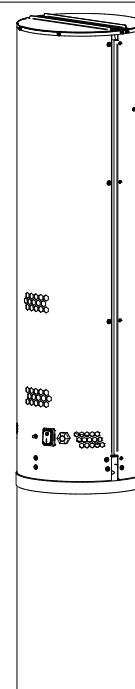
**See the guide for the mounting of the brackets.*



5

Connect the ESP-10 power cable to the power outlet and turn on the power switch on the filter.

See the chapter **Electrical installation** for more information.



ATTENTION! The chimney sweeper must be made aware that the chimney is equipped with an ESP-10 filter! The supplied high voltage warning label must be attached to all inspection/cleaning hatches in the chimney system.

Electrical installation

The electrical installation should only be carried out by competent personnel in compliance with applicable laws.



ATTENTION! Always disconnect the power supply before working on the device and make sure that it cannot be reconnected accidentally. Check that the power switch is set to off.

General information

- The electrical installation must be carried out in compliance with applicable laws.
- This ESP-10 **must have (PE) ground connection**. Power supply needed: 230 V AC / 1.0 A

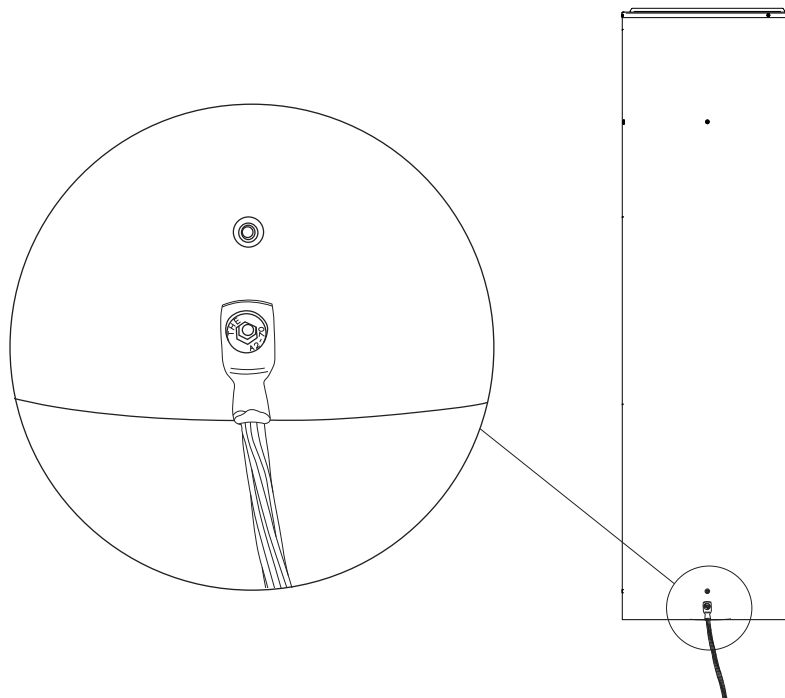
Power connection

The ESP-10 is delivered with open wires. A plug with (PE) ground connection needs to be installed on the filter. The plug must match the local requirements for electrical installations.

Lightning/arrester protection connection

For lightning protection system. Connection as shown on picture.

Use one of the 6 hexacon screws where the adapter is mounted for direct ground connection.



Start-up and configuration

General

Plug in the power supply to the ESP-10 filter and turn the main switch on the filter to position “on”.

The filter will start up and is now ready for the wood stove to be lit.

Be aware! Whenever the power is switched on and the temperature is higher than 40°C, the filter will be on for 1.5 hours (the impeller will run), even if the stove is not used. First hereafter then will the filter go to sleep-mode.

There is no further configuration, when the chimney is used. The filter will run automatically.



ATTENTION! Do not open the electrical control box. If opened, the warranty is void.

System test

When the filter is activated for the first time, the chimney must be cold. Check that the cleaning function starts and runs for 3-5 seconds. Make sure that the ESP-10 starts afterwards. Ensure that the LED on the ESP-10 filter is green.

When these points have been verified, the filter is ready for operation.

User operation instructions

User operation

Always load the stove with dry and clean wood only and in accordance with the stove manual.



ATTENTION! Never use the stove with the filter turned off or the power cable not plugged in! This will result in permanent damage to the filter.

For operation, the filter must be connected to a 230V power outlet with a PE connection and turned on by activating the outlet switch as well as the main switch on the filter itself.

When the filter is turned on, it will start the automatic cleaning process which lasts for 5 seconds.

If the chimney temperature near the filter does not exceed 40 °C for a period of 1 hour, the filter will engage sleep/standby mode to reduce power consumption. The filter will remain in sleep mode until the fireplace is lit, and the temperature and the flue gas temperature rises.

Attention! The automatic cleaning procedure may be heard as a mechanical noise in some situations. When the automatic cleaning process has finished, it takes approximately 3-5 seconds for the filter and ESP-10 to be back up and running.

Note! Please note that even if the electrostatic precipitator malfunctions, the ESP-10 will still run. In case of a power failure (no power to the filter), air and smoke still have free passage through the filter, meaning the stove is safe to use.



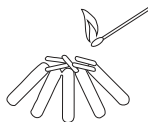
CAUTION! Do not overheat the stove.

Small deposits of soot can kindle and start a chimney fire, which may cause dangerously high temperatures in the chimney. If you have experienced a chimney fire, you must ensure that the mechanical and electrical functions of the ESP-10 are inspected. If defects or irregularities are found, these must be repaired before further use of the ESP-10 or the stove.

Operating fireplace or stove



Starting the fire (Lighting): Place a few small logs and some kindling & firelighters in the fireplace/stove.



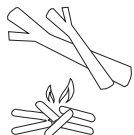
Open the air intake completely on your stove/fireplace.
Ignite the fire and close the door to the fireplace/stove.
Make sure there is no spillage of flue gases from the fireplace opening.



Shortly after igniting the fire, the filter will start up automatically and add draft to the chimney.



When the fire has caught on and all the wood logs are burning, reduce the air intake on your stove/fireplace.



Refueling: In order to avoid getting soot and smoke into the room when adding wood to the fire, the filter will still run during the refueling.

Open the fireplace door and place a few logs onto the embers.



Post-purge: Stop refueling when you want to let the fire burn out.

Approx. 30-60 minutes after the fire has burned out, the particle filter will go into standby mode, and the fan will stop.



DANGER! Check that the heating appliance (fireplace, furnace, etc.) is working properly after the particle filter has been switched on. Make sure that no flue gases are spilling out as this can lead to carbon monoxide poisoning!

Indications on the ESP-10 filter

The LED located next to the main switch on the filter will indicate current filter status.

The following diagram illustrates the various status categories, as indicated by the LED.

LED		
OFF	●	OFF
Green ON	●	In operation
Flashing Green once per second	● ● ● ●	Sleep mode/Standby mode
Flashing Green 5 times per second	● ● ● ● ●	Automatic cleaning in progress
Red ON	●	General failure
Flashing Green 5 times per second Solid red for 5 seconds Green for in operation		Automatic cleaning fail
Flashing Red once per second	● ● ● ●	No PE connection
Flashing Red/Green once per second	● ● ● ●	Current limiter/sparkover safety system activated
Flashing Red/Green 5 times per second	● ● ● ● ●	Current limiter/short circuit safety system
Solid green for 5 seconds, short black, red for 1 second, short black	● ● ● ● ●	ESP-10 control ESP-10 is overheated

Maintenance and troubleshooting

Safety precautions

The ESP-10, including the fan, must be inspected at least once a year in connection with inspection of the chimney, performed by competent personnel. Soot and other deposits must be removed from the fan rotor blades and from high voltage insulator.

When working on the roof you must follow the appropriate guidelines and provisions.

Important! The chimney sweeper must be informed that the chimney is equipped with an ESP-10 filter. The user is responsible for informing the chimney sweeper about the filter and provide him with the relevant documentation for inspecting the filter in accordance with official guidelines.

Before working on the ESP-10 and during maintenance the filter must be switched off and removal of plug from socket-outlet is mandatory before maintenance. ESP-10 must be supplied from a main socket-outlet close to ESP-10. Further, let the particle filter cool down before servicing or cleaning. Make sure that the heat source and the electrostatic precipitator cannot be enabled accidentally.

Do not open any part of the ESP-10 unless the power supply is switched off at the power switch. The surface can be hot.

When the temperature in the exhaust system increases, the high voltage automatically switches on. Touching the electrode or any part inside the ESP-10 during operation may be fatal.

User maintenance

- The user should always pay attention to the status of the filter and react promptly if something out of the ordinary should occur.
- The user must react to abnormal noise or other abnormal operation.
 - The user must inspect the filter if any abnormal function occurs.
 - The user must contact certified assistance if the abnormal function cannot be resolved.
- The user is responsible for hiring a competent person to clean the chimney and carry out periodical inspections of the filter.

The automatic cleaning cycle varies with the intensity in usage. Frequent use results in frequent cleaning.

The filter must be inspected following the first month of operation to identify if any disproportionate contamination has built up.

Note! The ESP-10 must be serviced by competent personnel!

When cleaning, ensure that there is free passage for rain water through all drainage points. The manufacturer cannot be held responsible for water ingress of any kind.

Inspection and service



DANGER! Make sure the filter is unplugged during cleaning and service!

The filter is equipped with a cleaning function that automatically cleans the filter when powered up, periodically cleans it during operation and during standby. This should be enough to keep the filter compartment clean provided only dry and clean wood is being used in the stove.

The filter must be inspected at least once a year by competent personnel. The chimney sweep must inspect both the filter compartment, the technical compartment and the fan compartment.

Inspecting the outside of the filter

When inspecting the general condition of the filter, the following must be observed

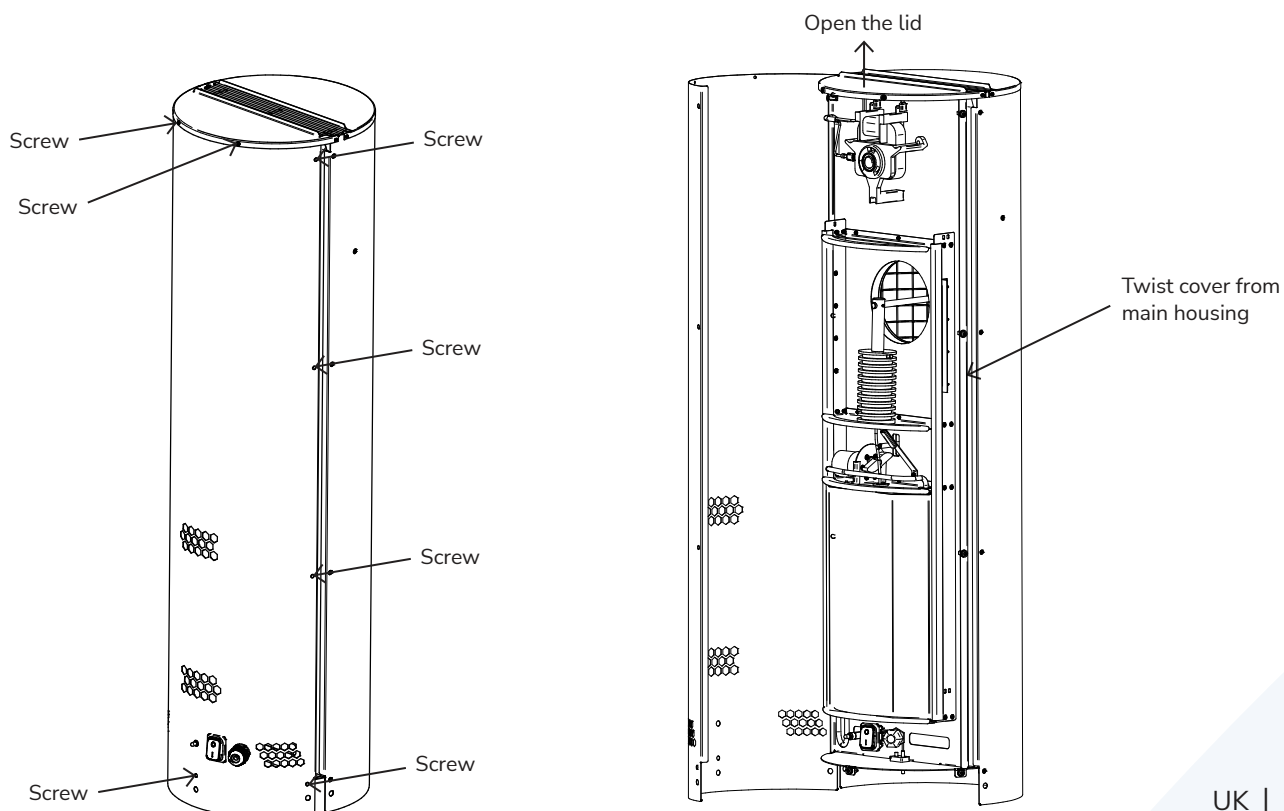
- Is the filter fixed to the chimney?
- Is the main switch in good and working condition?
- Are all covers and lids fastened correctly?

Inspecting the inside of the filter

When inspecting the technical compartment, the cover must be opened/taken of

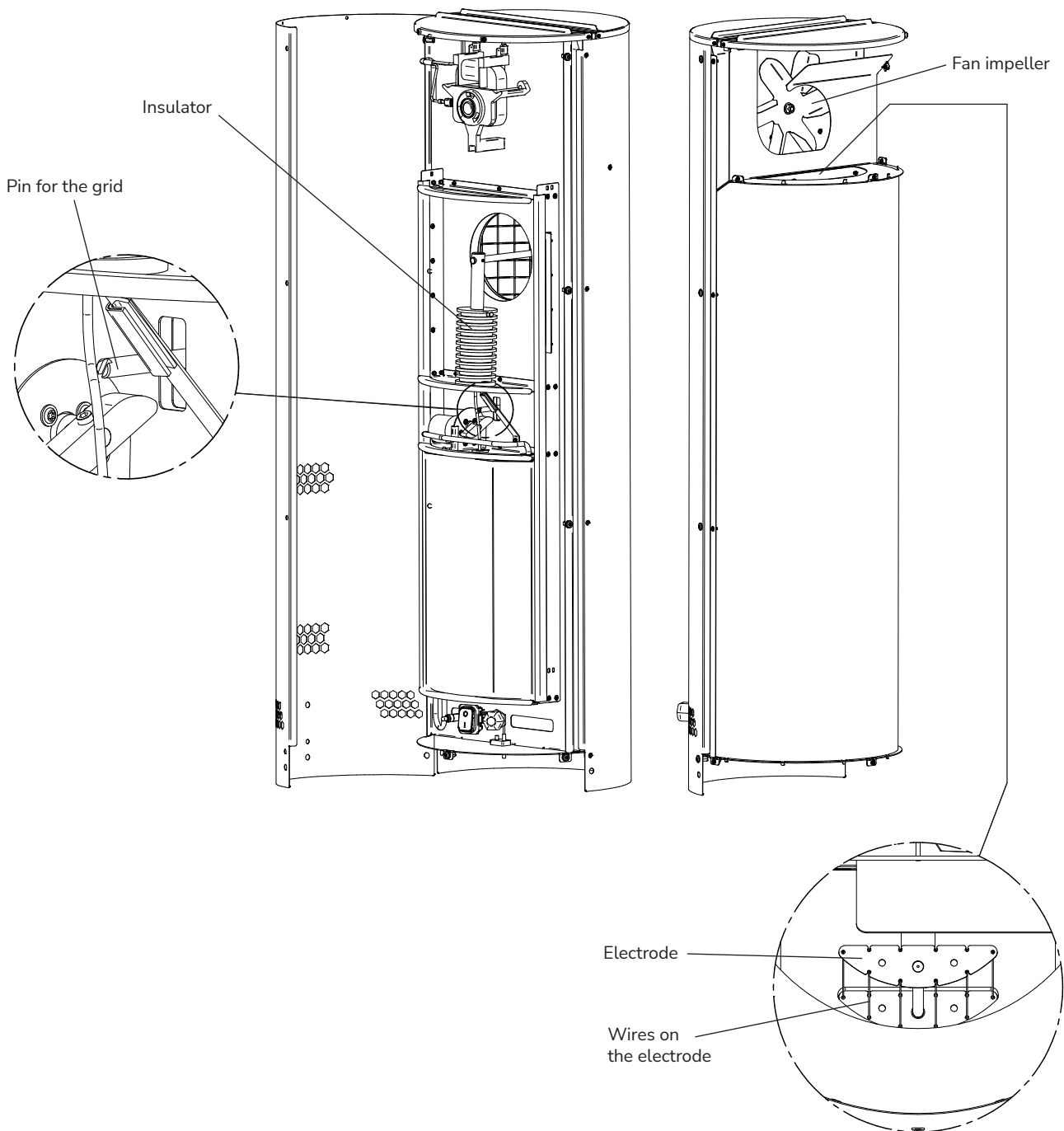
- Lose and remove all screws from one of the sides of the technical sides
- Open the lid and pop open the cover. If needed use a screwdriver to twist the cover free from the side of the baseplate. The cover can be opened max 25 cm.

If removal of the cover is needed, remove all the screws on the cover, and remove/the cover can be taken off. To fasten the cover again, first, insert all the screws on the right side and then use a flat screwdriver or a small Allen key to pull the cover down over the mounting panel.



General condition of the inside of the filter, the following must be observed

- Is the collecting grid moving freely up and down? Check by moving the pin by hand
- Is the fan impeller moving freely? Turn the impeller by hand
- Check the type of soot in the filter pipe/grid and ESP-10. If creosote soot, the stove is not used correctly
- General cleanliness of the filter, including technical compartment
- Is the electrode hanging straight inside the grid? Open the lid and check visually
- Condition of the wires on the electrode? Check that the wires are not broken



Replacing spare parts

The replacing of spare parts must be done by competent personnel. Apart from replacing the impeller, the cord or the electrode in case of damage, no other repairs to the ESP-10 are allowed on site. In case of defects, please contact your Exodraft dealer.

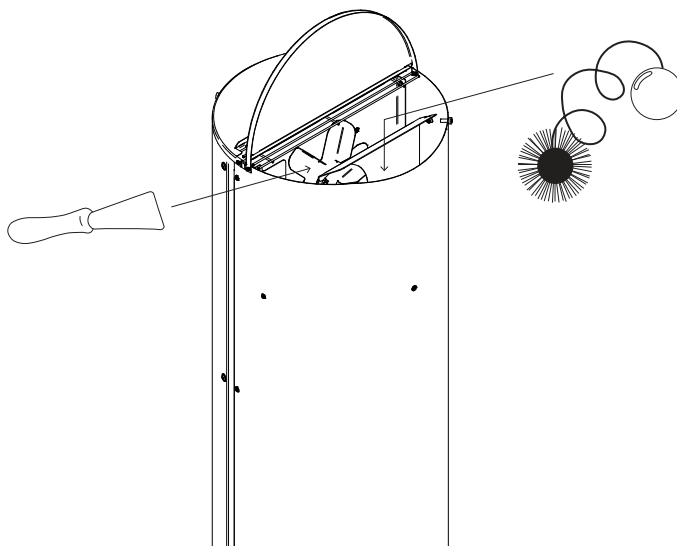


CAUTION! In case the original cord needs to be changed, only use a cord of the same type.

Cleaning procedure

Sweep cleaning of the filter and chimney

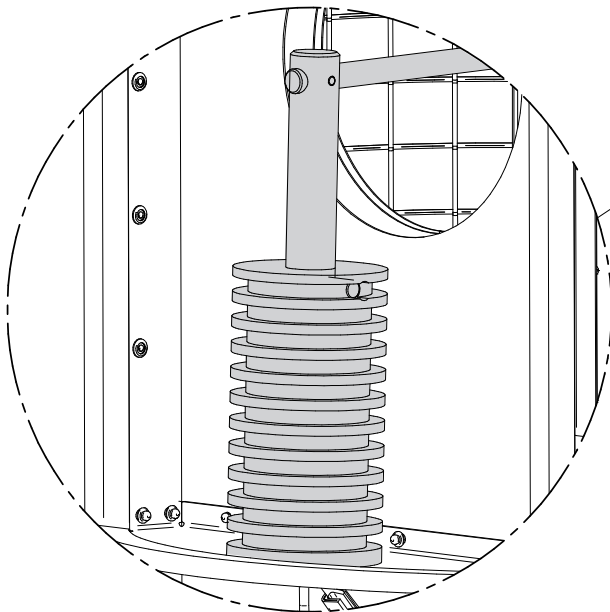
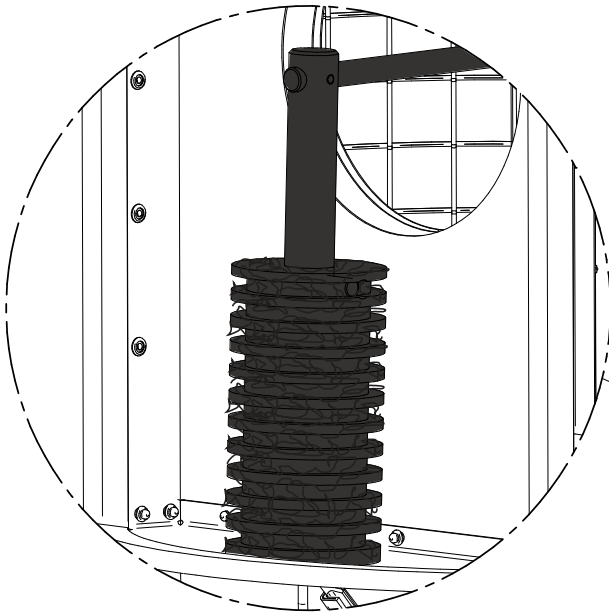
Step	Action
1	Use the isolation switch to switch off the power to the filter and make sure the fan doesn't rotate.
2	Loosen the screw and open the lid on the top section of the filter (smoke side)
3	Using a scraper or brush, carefully clean the axial vane/impeller.
4	Check the path taken by the smoke through the top and bottom sections of the fan for soot deposits, and clean where necessary with a scraper or brush.
5	The chimney must be swept from below/ through a cleaning element
6	Make sure that the electrode is hanging straight inside the grid after cleaning



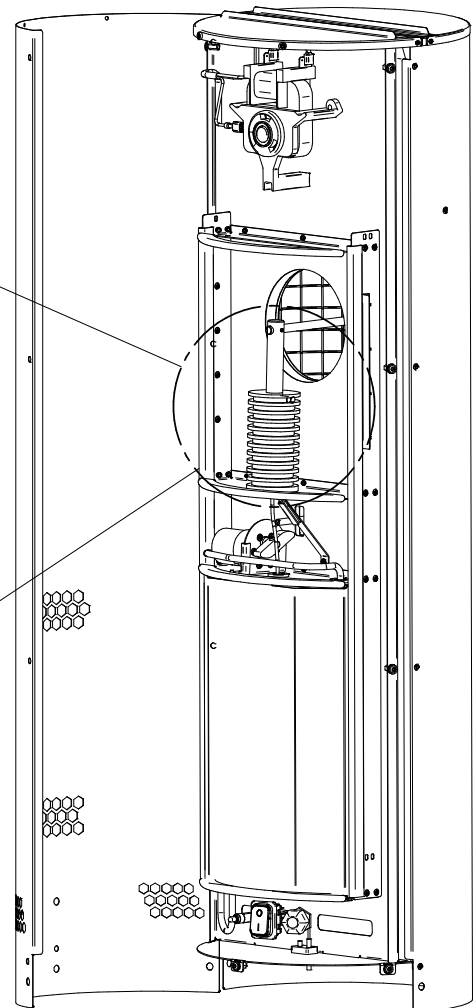
Cleaning and service of the insulator

- The insulator is cleaned with a piece of cloth using brake cleaner or similar. Cleaning needs to be done all the way around the insulator.
- Check that the inside seal in the technical side is undamaged.
- Check that pin and cam for the automatic cleaning system is tightened firmly.

Before cleaning



After cleaning



Troubleshooting

The filter first reaches its full efficiency after 10-20 fires or burning of approx. 15-20 kg of firewood.

Troubleshooting when warning lights are on. See also the chapter *Indications on the ESP-10 filter* for a diagram showing LED light status.

Observation	Problem	Solution
<i>LED constant red</i>	General failure	Call for service
<i>When powered on: Green flashing 15 sec, constant red 5 sec, constant green</i>	Automatic cleaning failure	Turn off power supply, wait for the ESP-10 to cool down and check if the pin is still connected to the cam.
<i>Flashing red LED</i>	Poor or no PE connection	Connect the power supply to a grounded power outlet
<i>Red/green light flashing once a second for 10 minutes</i>	Current limiter/sparkover safety system activated	Check the alignment of the electrode
<i>Red/green light flashing 5 times per second</i>	Current limiter/short circuit safety system activated	Check the alignment of the electrode and inspect the electrode for defects

Other problems and solutions

Observation	Problem	Solution
<i>No power supply to the filter</i>	The power is off	Check the power supply Check the main switch on filter
<i>The power supply to the filter is on but it is not working</i>	Poor or no PE connection	Have certified personnel establish grounded connection
<i>The power supply to the ESP-10 is connected but the fan hums and does not spin</i>	Soot may block the impeller	Clean the ESP-10, including the fan
<i>The filter does not automatically turn on even though the fire is lit</i>	The flue gas temperature has not yet reached 40 °C	Wait until flue gas temperature has reached a high enough temperature
	The filter is switched off or has no power supply	Check the power supply and the on/off switch
	Temperature sensor is not working	Check the position and connection of the temperature sensor
<i>The ESP-10 vibrates during cleaning</i>	This is OK. Simply a part of the cleaning function.	Check if the LED for “cleaning function” is flashing.
<i>The ESP-10 vibrates during normal operation</i>	The motor shaft on the fan may be bent	Have certified personnel change the motor
<i>Noises are coming from the ESP-10</i>	There might be “spark overs”	This is normal for short periods. If ongoing check electrode alignment
	Foreign objects may be stuck inside	Remove foreign objects
	The motor bearings may be worn out	Have certified personnel change the motor
<i>The self-cleaning function is not working</i>	Cut the power, and make an inspection/ service of the filter	1. Cut the power for 10 seconds
		2. Remove the cover on technical side
		3. Check that the cam is tightened firmly to the motor axel
		4. Check that the pin is in place
		5. Check that the wires from the motor are connected to the controller



UK Conformity Assessed



**Exodraft a/s
Industrivej 10
DK-5550 Langeskov**

Hereby declares that the following products:

ESP-10-STEEL, ESP-10-BLACK

Were manufactured in conformity with the provisions of the following regulations:

The Supply of Machinery (Safety) Regulations 2008

Electrical Equipment (Safety) Regulations 2016

Electromagnetic Compatibility Regulations 2016

Langeskov, 01-11-2022
Managing Director
Anders Haugaard



Declaration of Conformity

DK: EU-Overensstemmelseserklæring
 GB: Declaration of Conformity
 DE: EU-Konformitätserklärung
 FR: Déclaration de conformité de l'Union Européenne
 NO: EU-Samsvarserklæring
 PL: EU Deklaracja zgodności

NL: EU-Conformiteits verklaring
 SE: EU-Överensstämmelsedeklaration
 FI: EU-Vaatimustenmukaisuusvakuutus
 IS: ESS-Samræmisstaðfesting
 IT: Dichiarazione di Conformità Unione Europea



Exodraft a/s
Industrivej 10
DK-5550 Langeskov

Erklærer på eget ansvar, at følgende produkter:
 Hereby declares that the following products:
 Erklärt hierdurch auf eigene Verantwortung, daß folgende Produkte:
 Déclare, sous sa propre responsabilité, que les produits suivants:
 Erklærer på eget ansvar at følgende produkter:
 Niniejszym oświadczam, że następujące produkty:

Veklaart dat onderstaande producten:
 Deklarerar på eget ansvar, att följande produkter:
 Vastaa siltä, että seuraava tuote:
 Staðfesti à eigin àbyrgð, að eftirfarandi vörur:
 Dichiaro con la presente che i seguenti prodotti:

ESP-10-STEEL, ESP-10-BLACK

Som er omfattet af denne erklæring, er i overensstemmelse med følgende standarder:
 Were manufactured in conformity with the provisions of the following standards:
 Die von dieser Erklärung umfaßt sind, den folgenden Normen:
 Auxquels s'applique cette déclaration sont en conformité avec les normes ci-contre:
 Som er omfattet av denne erklæring, er i samsvar med følgende standarder:
 Zostały wyprodukowane zgodnie z warunkami określonymi w następujących normach:

Zijn vervaardigd in overeenstemming met de voorschriften uit de hieronder genoemde normen en standaards:
 Som omfattas av denna deklaration, överensstämmer med följande standarder:
 Jota tämä selvitys koskee, on seuraavien standardien mukainen:
 Sem eru meðtalin í staðfestingu Pessari, eru í fullu samræmi við eftirtalda staðla:
 Sono stati fabbricati in conformità con le norme degli standard seguenti:

EN 60335-1, EN 60335-2-80, DS/EN ISO 12100: 2011

I.h.t bestemmelser i direktiv:
 In accordance with
 Entsprechen gemäß den Bestimmungen der folgenden Richtlinien:
 Suivant les dispositions prévues aux directives:
 I.h.t bestemmelser i direktiv:
 Zgodnie z:

En voldoen aan de volgende richtlijnen:
 Enligt bestämmelserna i följande direktiv:
 Seuraavien direktiivien määräysten mukaan:
 Med tilvisun til ákvarðana eftirlits:
 In conformità con le direttive:

Maskindirektivet:
 The Machinery Directive:
 Richtlinie Maschinen:
 Directive Machines:
 Maskindirektivet:
 Dyrektywę maszynową:

De machinerichtlijn:
 Maskindirektivet
 Konedirektiivi:
 Vælaeftirlitið:
 Direttiva Macchinari:

2006/42/EF-EEC/-EWG/-CEE

Lavspændingsdirektiv:
 The Low Voltage Directive:
 Niederspannungsrichtlinie:
 Directive Basse Tension:
 Lavspenningsdirektivet:
 Dyrektywę Niskonapięciową

De laagspanningsrichtlijn:
 Lågspänningsdirektivet:
 Pienjännitedirektiivi:
 Smáspennueftirlitið:
 Direttiva Basso Voltaggio:

2014/35/EC

EMC-direktivet:
 And the EMC Directive:
 EMV-Richtlinie:
 Directive Compatibilité Electromagnétique:
 EMC-direktivet:
 Dyrektywę EMC – kompatybilności elektromagnetycznej

En de EMC richtlijn:
 EMC-direktivet:
 EMC-direktiivi:
 EMC-efirlitið:
 Direttiva Compatibilità Elettromagnetica:

2014/30/EC

Langeskov, 01-11-2022
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 Managing Director
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The logo for Exodraft, featuring the word "exodraft" in a bold, lowercase sans-serif font. The letter "x" is stylized with a curved line that loops around the top and right sides of the letter.