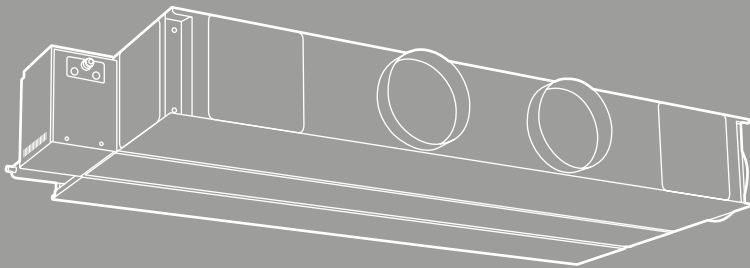


Aegean[®] - EC models

Installation, commissioning
and user manual



SFC 235 | SFC 260 | SVFC 500

Contents

Introduction	2
Declaration of conformity	3
Symbols used in this guide	3
Important safety and installation instructions	4
Product Information	6
Installation	9
Commissioning	11
Maintenance	12
Fault finding	14
User manual	
Speed controls	14
Registering your product	15
Disposal	15
After sales and spares	15

Introduction

Smiths Aegean Fan Coil Unit (FCU) is designed for heating, cooling and/or ventilating rooms. The inlets and outlets of the unit are positioned in such a way that the discharged airflow is distributed evenly across the room without causing discomfort to the people in it. The unit's dimensions are geared to integrating the unit in suspended ceilings.

The fan coil unit blows a flow of air into the room. The air may be taken in, at the user's option, either from outside (ventilation) or from the room itself (recirculation). Thus, the unit offers two benefits:

- The room is kept at the desired temperature
- Gradual deterioration of air quality in the room is counteracted

Delivery

- Check the unit and its packaging for correct delivery. Report any transport damage to the driver and supplier immediately
- Make sure that all parts and components have been supplied
- Report any defects to the supplier immediately

Handling

Please ensure that the current Manual Handling Regulations are followed.

The infiltration of coarse dust, cement, etc. may damage the unit. So long as such contaminants are in the room,

- do not put the unit into operation
- cover the inlets and outlets

Declaration of conformity

EC Declaration of conformity

We, Smith's Environmental Products Limited
1-2 Blackall Industrial Estate
South Woodham Ferrers
Chelmsford
Essex CM3 5UW
Tel: 01245 324900 Fax: 01245 324422

Declare under sole responsibility that the products:

Product name:
Aegean

Product range:
SFC260, SFC235, SVFC500

Conform to the following European Union directives
Low Voltage Directive 2014/35/EU Harmonised European Standard and Safety Directives

EN 60335-2-80:2003, +A1:04 + A209
EN 60335-1:2012/AC:14 + A13:2017

Electromagnetic compatibility (EMC) test standards
EN 55014-1:2006 inc A1:2009 & A2 :2011
EN 61000-3-:2014
EN 61000-3-3:2013

Immunity
EN 55014-2:2015 in accordance with category 2 requirements

This Declaration is made on behalf of Smith's Environmental Products Limited.

Symbols

This manual contains information and prescriptions marked by the following symbols.



Ignoring these safety provisions marked by the symbol "caution: hazard" may endanger the safety of people.



Ignoring these safety provisions marked by the symbol "caution: electricity" may endanger the safety of people, as well as the integrity of things.



The removal of the screws can cause the output of hot fluids under high pressure from heating system. Drain the system or close the isolating valves.



High temperature surface. Take utmost care to prevent people from getting in contact with the hot surfaces of the appliance.

Important safety and installation instructions

Prior to installation, read these installation and operating instructions. The installation and operation should also be in accordance with national regulations and accepted codes of good practice.



This appliance is not intended for use by persons (including children) with reduced physical, sensory or mental capabilities, or lack of experience and knowledge, unless they have been given supervision or instruction concerning use of the appliance by a person responsible for their safety. Children should be supervised to ensure that they do not play with the appliance.

To guard against injury, basic safety precautions should be observed, including the following:

1. Read and follow all safety instructions and all the important notices on the appliance before installing, using and maintaining the appliance. Failure to do so may cause personal injury or damage to the appliance or installation.
2. Always disconnect electrical supply before putting on or taking off parts and whilst the equipment is being installed, maintained or handled. Never work with bare feet and/or with wet hands.
3. To avoid possible electric shock, special care should be taken since water is used with electrical equipment. Carefully examine the appliance before and after installation. Do not operate the appliance if it has a damaged supply cord or enclosure, or if it is malfunctioning or it is dropped or damaged in any manner. Inspect the appliance periodically.

The appliance should not be electrically supplied if there is water on parts not intended to be wet.

4. Risk of scalding. To avoid injury before any servicing operation wait until the water has cooled inside the appliance. Do not touch the fluid or the appliance when temperature is higher than 60°C.

5. Improper use.
This is an appliance to be used in heating systems with clean water without abrasive particles.

Do not use this appliance:

- With liquids other than water (e.g. flammable liquids, etc.) (EN60335-2-51);
- In locations where special conditions prevail, such as the presence of a corrosive or explosive atmosphere (dust, vapour or gas) (EN60335-2-51);
- For other than intended use.

6. Installation.

The appliance must be mounted in a stable/fixed position in a dry, well ventilated, frost-free, waterproof and protected place, with sufficient ventilation around it. Make sure that the appliance is securely and correctly installed before operating it and that there is enough room around it for maintenance operations, dismantling, checking for free inspection.

The maximum ambient temperature at which the appliance is to be used is 40°C (EN60335-2-51).



7. Electric connection

IMPORTANT: Connection to the power supply must be effected by means of a fixed power cable which is fitted with a plug-type connection or a two pole isolating switch with a minimum contact opening of 3 mm.

Electrical connection must be carried out by a qualified electrician and in accordance with local regulations and both data on the name-plate and the appropriate diagram inside the terminal box cover.

Follow all safety standards.

8. Connect the appliance only to a mains supply protected by a Residual Current Device (RCD or Ground-Fault Circuit-Interrupter) with a rated residual operating current not exceeding 30mA.
9. Prior to any modification being made to the equipment, it must be agreed with and authorised by the manufacturer. Original spare parts and accessories authorised by the manufacturer are integral part contributing to the safety of the equipment and of the machines. The use of non original components or accessories may endanger the safety and causes the termination of the warranty. Safe operation is only assured for the applications and conditions described in Application of this manual.

Non-observance of the safety instructions results in the loss of any claims to damages.

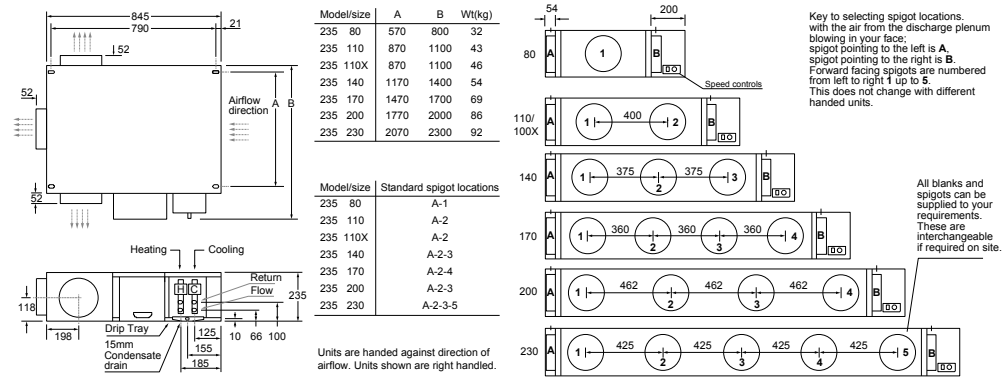
The indicated limit values are binding and cannot be exceeded for any reason whatsoever.

KEEP THESE INSTRUCTIONS FOR FUTURE REFERENCE.

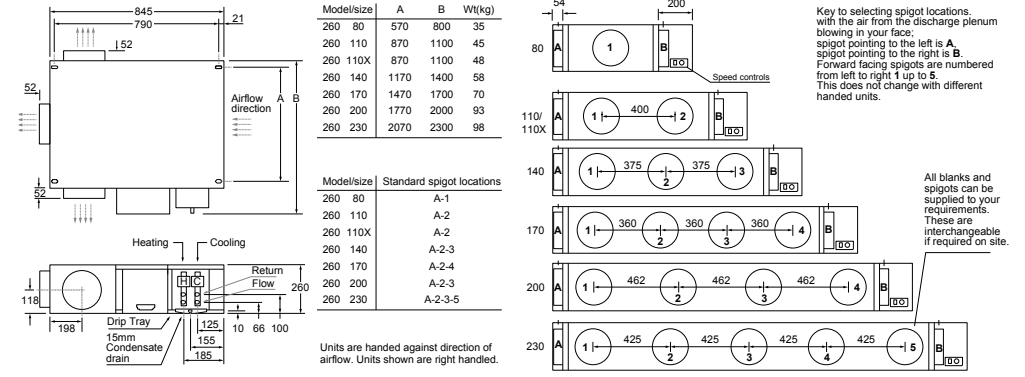


Product dimensions and performance data

SFC 235H



SFC 260H



Performance data

SIZE	NR	ESP (Pa)	Airflow (l/s)	SFP (W/l/s)	Total cooling (kW)		Heating (kW)
					6/12°C	6/12°C	82/71°C
235/80	35	30	124	0.35	1.97	1.61	2.06
235/110	35	30	168	0.23	2.67	2.18	2.80
235/110X	35	30	196	0.13	3.15	2.57	3.26
235/140	35	30	200	0.20	3.18	2.60	3.35
235/170	35	30	233	0.18	3.67	3.00	4.16
235/200	35	30	287	0.18	4.56	3.72	4.78
235/230	35	30	314	0.16	5.05	4.11	5.29

Summer Condition: 23°C EAT, 50% RH (6/12°C). Winter Condition: 21°C EAT (82/71°C)

Performance data

SIZE	NR	ESP (Pa)	Airflow (l/s)	SFP (W/l/s)	Total cooling (kW)		Heating (kW)
					6/12°C	6/12°C	82/71°C
260/80	35	30	146	0.23	2.32	1.89	1.92
260/110	35	30	169	0.27	2.73	2.22	2.24
260/110X	35	30	206	0.27	3.31	2.69	2.72
260/140	35	30	270	0.20	4.27	3.49	3.67
260/170	35	30	302	0.19	4.80	3.92	4.59
260/200	35	30	367	0.18	5.82	4.75	4.87
260/230	35	30	384	0.17	6.09	4.97	5.09

Summer Condition: 23°C EAT, 50% RH (6/12°C). Winter Condition: 21°C EAT (82/71°C)

Performance data verification

Heating and cooling performance has been tested and independently verified by BSRIA to BS EN 1397: 2015. Full set up and details available on request.

Acoustic data has been measured and independently verified by SRL Technical Services to BS EN 16583:2015. Please ask us for our acoustic information pack for more details, including laboratory measured sound power data.

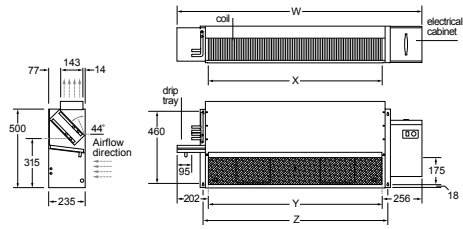
Performance data verification

Heating and cooling performance has been tested and independently verified by BSRIA to BS EN 1397: 2015. Full set up and details available on request.

Acoustic data has been measured and independently verified by SRL Technical Services to BS EN 16583:2015. Please ask us for our acoustic information pack for more details, including laboratory measured sound power data.

Product dimensions and performance data

SVFC 500



Model	Size	W	X	Y	Z	Wt(kg)
500	100	970	510	512	583	30
500	130	1270	810	812	883	40
500	190	1870	1410	1412	1483	58
500	220	2170	1710	1712	1783	66
500	250	2470	2010	2012	2083	80

Performance data

SIZE	NR	ESP (Pa)	Airflow (l/s)	SFP (W/l/s)	Total cooling (kW)		Heating (kW)
					6/12°C	6/12°C	82/71°C
500/100	35	5	153	0.35	2.45	2.00	2.01
500/130	35	5	183	0.13	2.96	2.41	2.42
500/190	35	5	302	0.15	4.79	3.91	4.74
500/220	35	5	345	0.18	5.45	4.46	4.57
500/250	35	5	414	0.20	6.63	5.40	5.50

Summer Condition: 23°C EAT, 50% RH (6/12°C). Winter Condition: 21°C EAT (82/71°C)

Performance data verification

Heating and cooling performance has been tested and independently verified by BSRIA to BS EN 1397: 2015. Full set up and details available on request.

Acoustic data has been measured and independently verified by SRL Technical Services to BS EN 16583:2015. Please ask us for our acoustic information pack for more details, including laboratory measured sound power data.

Installation

1. Fixing

The FCU MUST be installed LEVEL.

Make sure that the structure from which the total weight of the system to be borne by the mounting. This includes the weight of the FCU and any ducting used.

There are several ways to install the FCU:

- The FCU can be attached directly to the Concrete Slab;
- Attached to wooden battens which are directly attached to the Concrete slab;
- Suspended by threaded rods
- Suspended from a Suspension Rail

Consideration should be given to the transmission of noise with the type of mounting used.

Suspend the unit at a minimum height of 1.8 m.

This results in proper venting of the heat exchanger and (for units with cooling) in proper discharge of condensate.

Position the unit such that the modules will be easy to access both during and after installation.

2. Ease of access

Adequate access to and around the perimeter of the equipment must be given highest priority during the installation process. This will help in making essential maintenance as easy as possible. Do not obstruct the clearance around the fan coil units with ceiling lights, electrical trunking, pipes, conduits or ductwork. To ensure the effective maintenance of serviceable components, avoid installing the equipment above items (fixed or unfixed) that clearly compromise good access to the units.

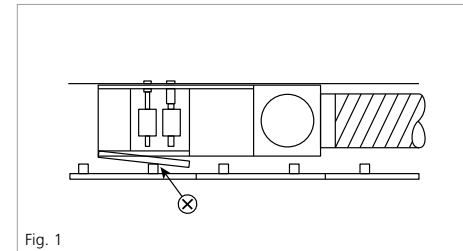


Fig. 1

3. Connecting ducts

Careful consideration to the external resistance is given during the fan coil unit selection process. The external resistance, normally expressed in Pascal's (Pa), is based primarily on the length and number of bends in the flexible ductwork connected to the fan coil unit. If the length of the duct or the number of bends is increased then this will apply added resistance, resulting in under-performance of both the cooling/heating duties and unit air volumes, an increase in the speed of the fan(s) and the sound level from the unit. The following guidelines reduce the risk of increased external resistance.

Mounting the ducts depends on the local situation, and is to be carried out according to your own judgment.

The FCU can be used with either flexible ducting systems using a Spigot adapter and steel rigid ducting systems. If a steel ducting system is used, ideally a 500mm section of flexible ducting should be used to join the steel ducting to the FCU. This will allow some flexibility should the FCU need removing for maintenance work.

Please follow the below instructions in order not to affect the unit's performance:

- Avoid any abrupt duct transitions.
- Keep ducts as short as possible.
- Mount flexible connection sleeves to the intake opening under slight tension (this is to prevent the connection sleeve from being sucked to a close at high fan speeds).
- Provide for proper sealing at transitions in the duct system.

4. Installation of ducts

1. Where practically possible, ensure that the ducts are kept in a straight line and the number of tight bends is reduced to a minimum. See Figure 2.

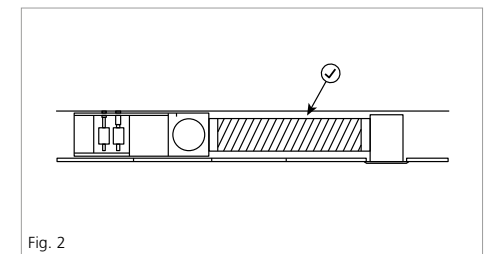


Fig. 2

- Do not squash the ducts so that they can pass easily under or around obstructions that appear to be affecting their natural course. See Figure 3.

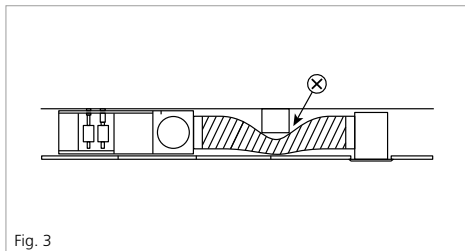


Fig. 3

- Avoid using more ducting than is necessary. Using more ducting than is required means that the internal spiral will not be stretched enough and result in uneven airflow patterns causing increased resistance and sound levels. See Figure 4.

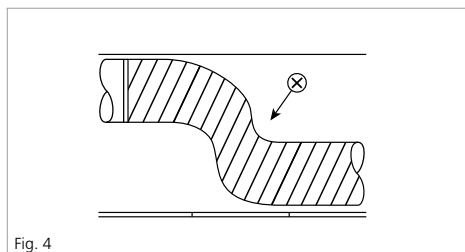


Fig. 4

5. Connecting to unit to the CH and/or CW system

Water Connections

The water connections are 15mm diameter and should be connected using 3-bar full-bore isolating valves on all 4 connections (Flow CH/ Return CH/Flow CW/Return CW) to facilitate maintenance of the FCU.

- Run the pipework and connect them to the screwed or compression fittings. Tighten the compression fittings well.
- Fill the CH and/or CW system.
- Vent the heat exchanger.
- Check the connections for leaks.

NOTE: If the FCU is to be left idle, i.e. no circulation of heating water, in winter, then the system should be filled with a glycol solution to prevent the system from freezing and damaging the heat exchanger in the FCU.

NOTE: Damage caused by exposure to frost is NOT covered by the warranty.

6. Condensate Tray Drain Connection Pipe

The fan coil drain connection pipe can be damaged easily and should always be treated with great care. The connection of the condensate tray drain pipe to the site drainage system should be made using a fitting that will allow future disconnection and reconnection to enable removal of the condensate tray for cleaning purposes and access to the coil block. Ideally a flexible connection pipe of 450mm should be attached to the 15mm drain point from the Condensate Tray and the rigid condensate drainpipe. This will facilitate easier removal of the FCU should it be required for future maintenance.

To help encourage better condensate drainage:

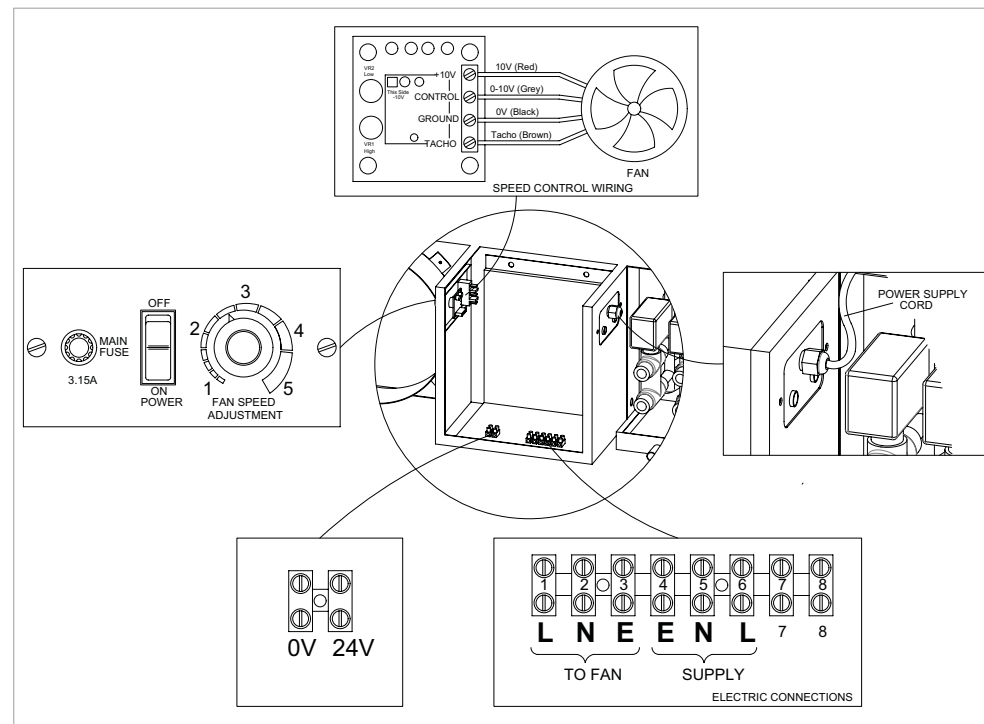
- Install a in line trap between the drain connection on the fan coil and the site drainage system.
- Condensate pipework must incorporate a fall that allows the fluid to gravity drain as required by current regulations.
- Condensate pipework must incorporate a sufficient number of hanging support pipe brackets to ensure the pipework does not bow under its own weight.
- Condensate pipework may require lagged insulation, depending on both the material that the condensate pipe is manufactured from and the temperatures of the chilled water being used.

Fan coil unit condensate drain trays are of an 'open ended' design. To help encourage the condensate to drain away effectively, the fan coil should be level when installed. Never install the fan coil in such a way that the condensate runs in the opposite direction to the drain connection. A fan coil unit installed in this manner will leak and damage the ceiling below, and could also possibly damage office equipment.

7. Connecting the FCU to the mains power supply

The FCU must be EARTHED.

The unit must be connected in accordance with current applicable local laws and regulations.



Commissioning

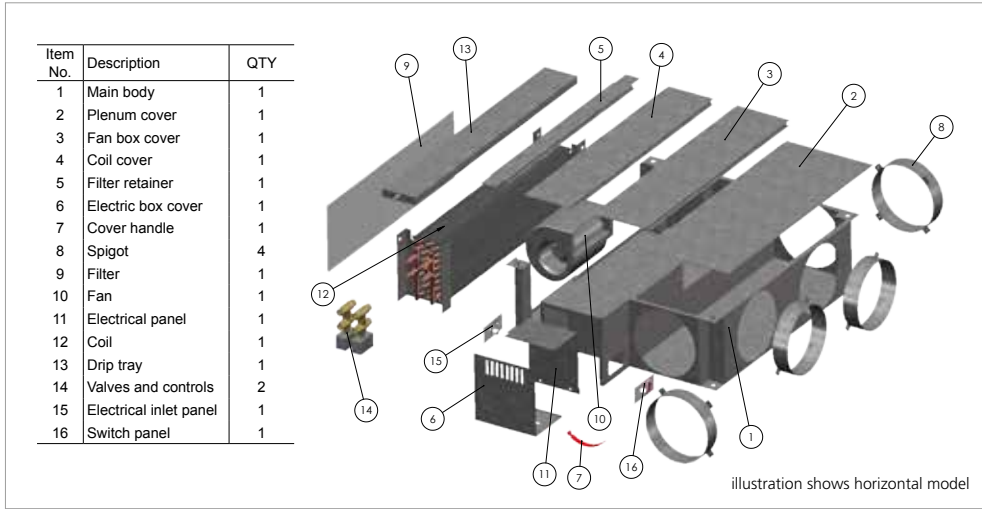
If the use of a hood device is employed whilst commissioning the air volumes, then remember to ensure that the additional resistance of the hood itself is considered; otherwise inaccurate readings will be taken. If differing volumes are taken from two ducts fed by a common unit then check both the ducts between the fan coil unit and the discharge plenum/grille. An increase in air volume of up to 15% can usually be obtained simply by straightening or reconfiguring the duct runs.

Switching on and checking operation

- Check if all modules are correctly suspended and secured.
- Check the order of installation of the modules.
- Check the connection to the mains.
- Check the controller connections (see the corresponding documentation).

- Switch on the mains supply.
- Make the controller ready for use according to the appropriate manual.
- Switch on the unit using the controller and check whether the unit blows out air.
- Make sure the CH and/or CW system is switched on.
- Let the unit heat and/or cool using the controller. Feel whether the discharged air is getting hot (if heating) or cold (if cooling).
- Vent the heat exchangers if necessary.

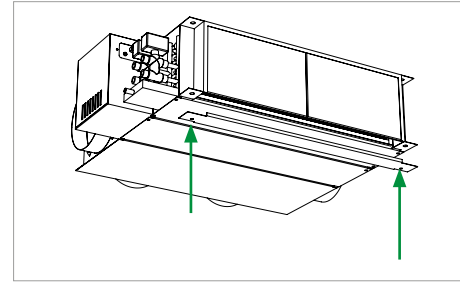
Maintenance



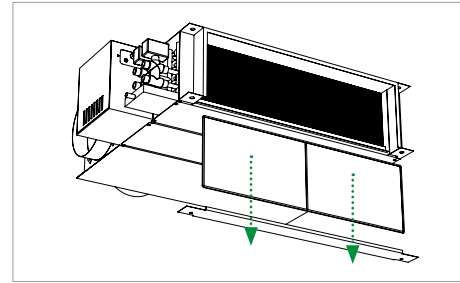
Maintenance period	Action required
Prior to handover	Clean filters
	Recheck design fan speed and temperature settings
	Ensure all valve commissioning pegs and caps have been removed
Quarterly	Clean filters
Twice yearly	Clean filters
	Brush (with a soft brush) or vacuum coil surface, or use an air duster
Once a year	Clean or replace filters
	Brush (with a soft brush) or vacuum coil surface, or use an air duster
	Wipe out condensate tray and clean with mild detergent if required
	Vacuum fan and motor assemblies as required, or use an air duster
	Visually inspect for any damaged or failing components

Note: If the fans do need cleaning then use only a soft brush. Under NO CIRCUMSTANCES use a hard tool/implement to clean the fan as it may damage the fan blades resulting in an unbalanced fan causing vibration.

1. Removing Filter

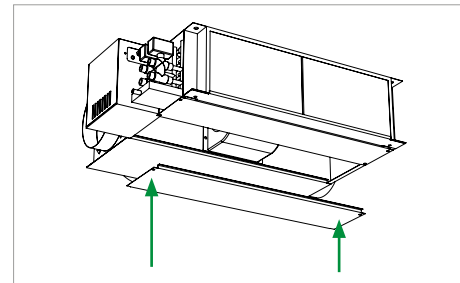


- Remove two screws holding Filter Access Panel
- Remove Access Panel



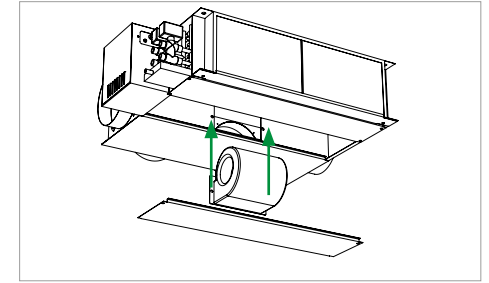
- Withdraw filter
- Reverse procedure to replace filter

2. Cleaning fan



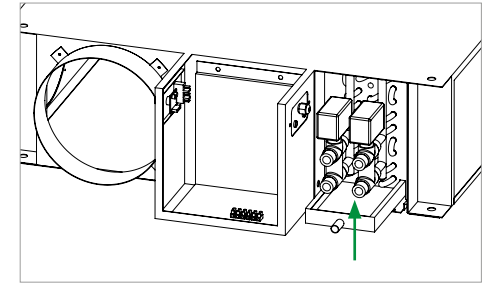
- Remove two screws holding in Fan Access Panel
- If the fans do need cleaning then use only a soft brush. Under NO CIRCUMSTANCES use a hard tool/implement to clean the fan as it may damage the fan blades resulting in an unbalanced fan causing vibration.

3. Removing fan



- Remove two screws holding in Fan Access Panel (see 2. Cleaning fan)
- Remove Fan Access Panel
- Unclip fan cable from cable harness
- Support fan body with one hand whilst removing two screws holding fan body in place. Note: Fan is heavy so needs supporting
- Replacement of fan body
- Reverse above process to replace fan body

4. Servicing Condensate tray



- Ensure Condensate Tray is clean and free from debris, ensuring drain point is clear.

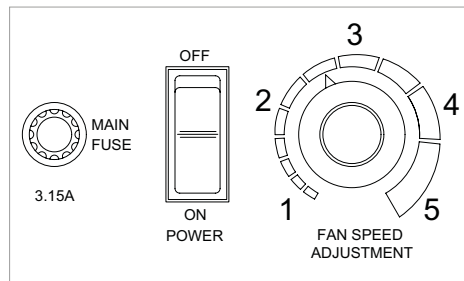
Fault finding

In the event of any difficulty, please contact us on +44 (0) 1245 324560.

Fault	Checking/Solution
Reduced air volumes and higher than expected noise levels are being experienced	<p>Is the correct fan speed selected?</p> <p>Is the filter dirty? Are the inlet/outlet grilles free from obstruction?</p> <p>If volume control dampers are fitted, are they shut?</p> <p>Are the flexible ducts installed correctly? (There should be no tight bends, no restrictions and no excess material in the duct lengths)</p>
Condensate does not drain or the unit leaks	<p>Is the condensate pipe/drain free from obstruction? Ensure the fan coils are installed level or slightly tilting toward drain end</p> <p>Is the air filter dirty? (Dirty filters restrict condensate flow)</p>
Controls do not work	<p>Have the commissioning valve caps or pegs been removed?</p> <p>Has the set point temperature been reset correctly after commissioning?</p> <p>Is the sensor being 'tricked' by an external temperature influence?</p> <p>Have the controls not yet finished their start-up diagnostics test?</p>

User manual

On/Off switch and variable speed controller



Registering your product

Thank you for purchasing a Smith's product. It has been designed and manufactured to the highest quality standards to ensure it gives you efficient and trouble-free service for many years. We are committed to achieving the highest standards and our faith is supported by a free parts and labour guarantee with every product.

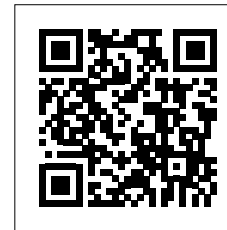
For more information on the warranty period for this product please visit our website smithsep.co.uk/product-registration/

This gives you the peace of mind that in the unlikely event of product failure, we will repair or replace the product completely free of charge providing the product has been installed, used and maintained in accordance with the instructions. Your statutory rights are not affected by this warranty.

It is important to register as soon as possible online at: smithsep.co.uk/product-registration/. This will ensure you will receive prompt and efficient service if your product requires attention within the warranty period. If you do not register your product, you will be required to produce proof of purchase prior to receiving service.

For more details please visit our website: SmithsEP.co.uk

SCAN HERE TO REGISTER YOUR PRODUCT



Disposal

Products with this symbol (crossed out wheellie bin) cannot be disposed as household waste. Old electrical and electronic equipment must be recycled at a facility capable of handling these products and their waste by-products. If you are purchasing replacement equipment your retailer may offer a 'take back' scheme, or will be able to give details of the nearest approved authorised treatment facility. Proper recycling and waste disposal will help conserve resources whilst preventing detrimental effects on our health and the environment.

WEEE Registered Code: WEE/ED0093VW



After sales and spares

If you experience any problems with the use of your product, please contact our after-sales office +44 (0) 1245 324560.

For product information, customer services or sales support call us on +44 (0) 1245 324900

For the Republic of Ireland, contact MT Agencies on 01 864 3363

Sales: sales@SmithsEP.co.uk

General information: info@SmithsEP.co.uk

Smith's Environmental Products Ltd
Blackall Industrial Estate, South Woodham Ferrers,
Chelmsford, Essex CM3 5UW

SmithsEP.co.uk

@SmithsEP_UK

#ThinkSmiths



Happy to help

Smith's Environmental Products Ltd is one of the leading manufacturers of heating and cooling products in the UK. We are committed to achieving the highest standards and our faith is supported by a free parts and labour guarantee with every product (see our website for more information). Our customer service is second to none and we are happy to offer any help and guidance that you might need.

Stockists

All products are available nationally from Builders' Merchants, Plumbers' Merchants, Heating Equipment Distributors and Kitchen Equipment Distributors. In the event of difficulty, please contact us or visit our website SmithsEP.co.uk for details of your nearest stockist.

Information and advice

Full technical specifications and list prices is available to download from our website or in hard copy from our office. Also available on our website are price lists, individual product data sheets, installation & user guides, where to buy, who to contact and a media centre.

Alternatively contact our office 9.00am to 5.00pm Monday to Friday.

As part our commitment to continuous improvement Smith's Environmental Products may change the specifications of its products without prior notification or public announcement. All descriptions, illustrations, drawings and specifications in this publication present only general particulars and shall not form part of any contract. All dimensions are in mm unless otherwise stated. Please visit the website for the most up to date information.

**To view the full product information
download the datasheet at:
www.SmithsEP.co.uk**

For product information, customer services or sales support call us on **+44 (0) 1245 324900**

For the Republic of Ireland, contact MT Agencies on 01 864 3363

Sales: sales@SmithsEP.co.uk

General information: info@SmithsEP.co.uk

Smith's Environmental Products Ltd
Blackall Industrial Estate, South Woodham Ferrers,
Chelmsford, Essex CM3 5UW

SmithsEP.co.uk

[@SmithsEP_UK](https://twitter.com/SmithsEP_UK)

[#ThinkSmiths](https://www.facebook.com/ThinkSmiths)

Issue 008 | 85-0030 | March 2023