



Kitchen Ventilation O&M MANUAL

Installation completion documents.
Instructions for the operation and on-going
maintenance of your systems.

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Kitchen Ventilation Operation and Maintenance Manual

Information Provided By –



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What is a Kitchen Ventilation System?

A cooker canopy is currently defined by the CEN European Standards Committee as being a device intended to collect contaminants from above a cooking appliance and remove them from the room. In practice kitchen canopies have become much more than basic extract systems.

The prime function of a kitchen canopy is to protect the area surrounding the cooking process from soiled matter and flame, to make tolerable and safe and to protect the immediate area for people to work in. An air flow shall be created across the cooking process to capture the fumes created and the by-products of this vapour shall be collected and contained by means of the filters within the canopy, allowing the cleaner air to be discharged.

The Food Safety (General Food Hygiene) Regulations place an onus on the proprietor of a food business to ensure that all hazards are identified and that steps are taken to ensure that adequate safety features are in place. Part of that process requires that there must be suitable and sufficient means of either natural or mechanical ventilation.

The Workplace (Health, Safety and Welfare) Regulations also require that an effective and suitable provision must be made to ensure that every enclosed workplace is ventilated by a sufficient quantity of fresh air .

Ventilation is required in both the kitchen and the adjoining areas because:

- Considerable convective and radiant heat is given off by the cooking equipment. The air becomes laden with odours, grease fumes and products of combustion.

- During meal preparation and washing up, humidity is increased over a wide area.

- Air replacement and consistency of temperature are required in adjoining areas.

- Air is required to dilute and replace products of combustion from gas fired appliances.

- Supply air is required to ensure complete combustion of the fuel and provide safe operation of the gas equipment. Details of these requirements are contained in the Building Regulations, BS 6173 and the CIBSE guide.

The British Standard BS 6173, Installation of gas-fired catering appliances for use in all types of catering establishments (2nd and 3rd family gases), includes a requirement that gas fired catering appliances cannot be operated without the kitchen ventilation system in operation. Therefore, an air proving device shall be installed in the kitchen ventilation system and interlocked with the gas supply for the kitchen. The kitchen ventilation contractor shall be specifically responsible for providing the air proving mechanism.

The four main emissions that require removal are:

- Smoke

- Expanded air from the heat load surrounding the cooking device.

- Precipitation of moistures existing in the food into a vaporous state, primarily consisting of steam, grease and cooking odours.

- Exhaust fumes from combustion appliances such as gas, charcoal or mesquite.

Your Canopy

Your new canopy is covered by a twelve-month warranty which is subject to following the care instructions set out in this manual.

All non-warranty issues will be charged if repaired or replaced within this time. Callouts will be charged up front and reimbursed subject to Springfield liability.

Our twelve-month warranty will not cover repairs resulting from misuse.

Your newly installed canopy (canopies) maybe one or more of the following -

Wall mounted canopy

When your cookline is single bank cooking, usually requiring a single filter bank manufactured to the length required.

Island type canopy

When you have a double bank of filters and equipment so cooking will be done from both sides, usually installed in larger kitchens where space is not an issue.

Low level wall mounted canopy

Installed at low level to increase the extraction rates usually over equipment such as fryers etc.

Condense wall mounted canopy.

Installed above sink or dishwasher unit (304 grade)

Your canopy has a number of parts which require care to maintain a long lifespan and increase the performance of the entire system.

Below is a list of removable filters and drain pot or tap with instruction on usage.

Canopy Stainless Steel Construction

Our kitchen extraction canopies are manufactured from either 304 or 430 grade stainless steel. **Do not use any other cleaning products** aside from soapy water or professional stainless-steel cleaner on the fabrications to keep the condition and finish of the equipment always looking new.

Care Instruction

As per your system cleaning interval recommendations given in your cleaning and maintenance proposal.

Canopy Internal

Remove the filters from the canopy (for baffle filters: use handles or baffle filter removal tool; for mesh filters: use handles on filter; for coil filters manually lift)



Use cleaning cloth and soft abrasive brush along with soapy water to break down the grease and leave the walls of the canopy clean.

Canopy External

Follow the safety instructions on the stainless-steel cleaner product.

Pre clean using soapy water and allow to dry.

Use Springfield Products stainless steel cleaner to entire canopy by using a soft cloth.

Filters

Your newly installed canopy (canopies) may have one or more of the following stainless-steel filters installed within the canopy. The amount and size are determined by the design of the relevant system(s).



Figure 1 - Baffle Filter



Figure 2 - Mesh Filter



Figure 3 - Coil Filter

Baffle Filter *(as shown in Error: Reference source not found item 3 & Figure 1)*

Baffle filter has curved laminated metal vanes with aerodynamic shape & U 'shape frame, with handles, heat, top & bottom drain holes, flame & grease proof dishwasher safe, stainless steel, satin finish. Make sure the vanes run vertically when replacing back into the canopy.

Mesh Filter *(as shown in Figure 3)*

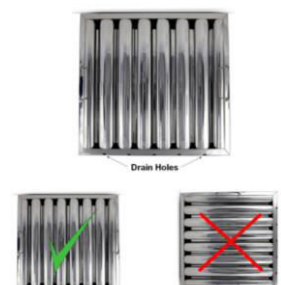
Mesh Grease Filters are generally installed in commercial restaurant kitchens, although baffle type is the preferred method, the grease filtration media is a crimped steel knitted wire mesh that is enclosed in a stainless-steel channel frame.

Coil Filter *(as shown in Figure 2)*

Coil Filters are the first line of defence for kitchen ventilation systems. Working on extraction air before it gets into the canopy, they capture up to 95% of grease and oil particles, whereas baffle filters collect around 60%.

Care Instruction

Remove baffle filter using either the two handles provided or using a baffle filter removal tool by lifting upwards and pulling the bottom edge



out towards you. Clean with warm soapy water or in a dishwasher. When reinstating the filter, lift the top edge in and drop the bottom edge into the channel. Ensure the grease holes are on the bottom edge facing towards you *(as show in Figure 4)*

Repeat same method for mesh and coil filters.

Wear appropriate clothing and the relevant Health and Safety equipment plus cover over any fryers before working over hot oil.

Grease Pot

Located on the rear channel of the canopy below the filter section. As shown in *Error: Reference source not found item 2* *Figure 4 - Canopy filter correct use*

The grease pots role is to collect excess grease lying in the canopy channel. The grease pot is semi- transparent allowing you to see when the pot needs to be emptied.



Figure 5 - Grease Pot

The grease pot should never be allowed to fill if cleaning is carried out regularly.

Care Instruction

Remove the grease pot by sliding out from the bracket.

Clean out using soapy water or placing in the dishwasher. Allow to dry.

Clean around the drain hole and reinstate the grease pot.

The Extraction System

The primary function of a kitchen ventilation system is to expel air from the cooking area. The extraction system has several parts to it. Built into the extraction system you may have additional filtration systems (explained further on in this manual).

Fan

The fan is the heart of the kitchen ventilation system, without it the system would not function.

Care Instruction

To maximise the life of the fan, when cooking has finished, leave the fan on for a minimum of 15 minutes or until the system is cool. This will stop the build-up of grease on the motor and remove the build-up of heat around the motor.

Silencers

Your system may have silencers installed to reduce the noise produced from the running of the fan. These are usually requested by the local authority. Silencers are installed close to the fan either in

Figure 6 - Cased axial fan

front, behind or a combination of both. The care of the silencers is only maintained by a professional cleaning company (The Springfield Group can provide this service).

Cowl

The cowl in the extraction system is the final discharge point for the air. Your extract cowl may be one of the following –

- Chimney cowl or tapered discharge
- HV Jet cowl
- Open faced mesh

Care Instruction

Visually –check that the cowl is free from obstruction. Any obstruction may affect the performance of the extraction system.

DO NOT USE ACCESS EQUIPMENT TO CHECK UNLESS A RISK ASSESSMENT HAS BEEN PERFORMED.

The Supply Air System

The supply air system brings in fresh air to 80 percent of the air volume taken away by the extraction system. Your new system may have a supply air grill mounted to the front of the canopy or through diffusers mounted in the ceiling or ceiling grid.

To maximise the life of the system the supply air fan should run for a minimum of 15 minutes in line with operation the extract fan.

Care Instruction

User care of your heater battery can normally only be ascertained when temperatures drop below the desirable value. AHU units or duct mounted heater batteries are to be inspected and checked every 3 months. Check any panels for fault indications, this will normally be given via an LED light or digital display.

Service and Maintenance

AHU Units are to be checked as per the following schedule:

- 3 Monthly: Filters should be inspected and if found to be heavily soiled, replaced.
- 6 Monthly: The fan impeller should be carefully cleaned with a brush. This will prevent the impeller from becoming unduly dirty and unbalanced.
- 12 Monthly: The security and integrity of all fastenings should be checked, particularly the motor mounting frame.

The Filtration Systems

Your new system may incorporate one or more of the following filters listed in this section. Filters act to block contaminants in your system.

Carbon Filter



Figure 7 - Carbon Filter Cell

Activated Carbon Filter units are designed to remove up to 90% of odours omitted from your extraction system, they will be inserted within a housing, and All will have pre-filters installed to protect the life span of the carbon.

Care Instruction

All carbon filter units will have a pre-filter installed immediately before the carbon unit, these pre filters should be replaced no longer than 4 weekly intervals.

By replacing the pre-filters regularly, you will maximize the life span of the carbon unit itself.

Carbon filters will need to be replaced between every 4-12 months dependant on the type and hours of cooking used. The units are extremely heavy and it is advised you use a professional company to replace these units (The Springfield Group can provide this service).

Please see your system details in section 2 for recommended replacement intervals. This is based on your cooking type and cooking hours per day.

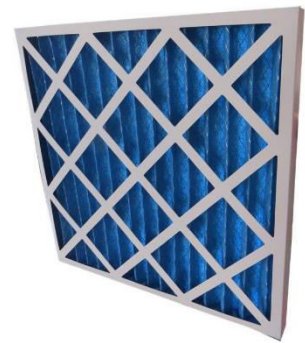


Figure 8 - Pre Filter

Service and Maintenance

Your unit may have one or two covers, for the pre-filter and the carbon filter unit or for both.

Remove the cover by untwisted all screws, take off the cover and place to one side

Remove the pre filter and the carbon filter by sliding out from the guide

Replace both filters

Replace cover

WARNING –The carbon filter unit is **VERY HEAVY**. This task may require 2 persons. Please take care when carrying out tCare Instruction

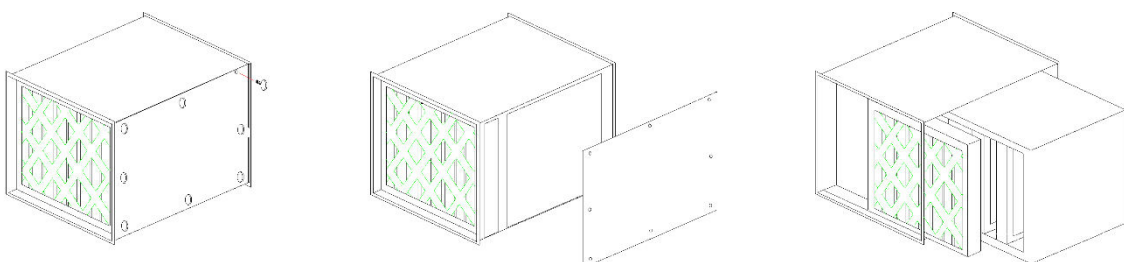


Figure 9 - Carbon Filter Housing

Electrical System

The working of your kitchen ventilation system is solely reliant on the electrical installation. It is imperative that all the items within your system are installed and maintained to BS7671 –Requirements for electrical installations.

If your electrical system / part of your system has been installed by The Springfield Group, you will have received an electrical schematic drawing.

If the Springfield Group have supplied the on-site electrician with the equipment to install, then they will have been advised to install as per the relevant electrical schematic drawing. If requested, The Springfield Group may have commissioned the installation giving you a full 1-year warranty on your equipment.

Care Instruction

You should visually check the following on a routine basis, ideally weekly –

- Switches and button are not damaged and free of grease.

- Cables are not damaged.

- Cables are not hanging loose out of any accessory.

Service and Maintenance

In line with BS7671 your system should be electrically tested and inspected at a minimum of 1 year interval for general checks and 5 years for a full EICR (Electrical Installation Condition Report) in a commercial environment. If your installation is part of an industrial food process, then the minimum interval for a full test and inspection will be 3 years.

Gas Interlock System

Your new kitchen ventilation system will have a gas interlock system installed. The purpose of a gas interlock system is to maintain kitchen safety and reduce gas related accidents.

The gas interlock system cuts off the gas supply and cannot be turned on unless the kitchen ventilation system is on and working. This prevents carbon dioxide and nitrogen build up in the atmosphere and prevents explosions caused by the ignition of unburned gasses lying dormant.

For older systems or systems with a higher specification, a gas proving system may be installed. This works in the same way as a gas interlock system but includes a transducer. The transducer allows the gas line to purge and pressurise looking for leaks, or appliances without a FFD (Flame failure device) that are not left open.

To use the gas interlock system first turn on both the supply air and extract air fans via the relevant switching accessory.

Once the fans are running make sure all stop buttons are depressed and press the start or on button to actuate the gas valve.

Weekly, check the functionality of the gas interlock system. If you have taken out a system care package with The Springfield Group, then this will also be checked and verified periodically.

Without turning on and using any gas appliances do the following –

Turn on the gas interlock panel without any fans on. The gas should not come through. If this check passes move on to step 2.

Turn on the supply air and extract air fans

Turn on the gas via the interlock panel

Switch off one of the following repeating the process for all 3

Supply air fan

Extract air fan

Stop button or yellow call point (also known as a break glass)

Check the gas interlock panel to see if the gas supply has been cut off. The panel should indicate which device was at fault.



Figure 10 - Intelligas 100s Panel

If the gas interlock panel has been interconnected with your fire alarm system, then you should check the operation of the gas interlock system when putting the fire alarm panel into fire 'mode. Please consult your fire engineer for further details.

Troubleshooting

Q. My gas is not coming on

Check the gas interlock panel. Are all the fans on and or emergency stop buttons/call points depressed.

Is the manual lever for the gas in the 'on' position?

Listen to hear if the fans are on. If the fans are on, check all filters are clean and any cowlings are free from debris. This will cause a lack of suction and may cause an impairment of an air differential pressure switch.

Q. My fans are not working

Check the fans have been turned on

Check all circuit breakers are in the 'on' position

Check all isolators / switches are 'on'

Check the DOL starter green button has been pressed. If this makes a clunk then there is power to the starter. Also press the red button and listen for the clunking noise. Press the green button again. Check all filters within the system are clean and have been replaced. Consult the maintenance check sheet for recent events.

Q. If Interlock Panel Shows Fan Fail

Check to see if fans are running first, you can check this by holding tissue paper against the filter in your canopy, if it holds the paper the fan will be working so this will point to a problem with the interlock panel.

If it does not hold the paper and you can't hear the fan running, go to previous as this points to fan issue.

Q. My Canopy is not extracting properly (loss of suction)

Check ALL filters within the extraction system, carbon pre-filters and activated carbon filter are the main cause of suction loss. If there is a speed controller for the extract fan, check this is at the optimum speed for your cooking type.

Q. Supply Air is too cold.

Check on your details if you have an AHU installed with heater first, if you have and air is blowing cold. If the answer is YES, check the power supply to the air handling unit or heater battery, if power supply is good, you may have an issue with the unit.

If you do not have an AHU and a standard fan unit is installed the fan will only blow ambient air through system so you may require changing to an AHU

**FOR TECHNICAL SUPPORT PLEASE VISIT WWW.THESPRINGFIELDGROUP.NET/SUPPORT AND REQUEST A
TICKET**

Site Log

Recording the maintenance of your system is important to validate your insurance. Most insurers require a kitchen ventilation system to be maintained at regular intervals in accordance with guidance set out by The Springfield Group.

You will have received a maintenance package quotation with your original kitchen ventilation system quote. If you haven't already taken out one of our insurance compliant packages please refer to the original quote or call us on [01675 430 490](tel:01675430490).

The Springfield Group or your own sourced kitchen ventilation cleaning provider should be made to fill out the following records. Please make the service engineer aware and ensure they fill out the forms below. In the event of an accident your insurance may be invalidated if your records are not up to date.

Usage –

The forms provided are to be filled out by both staff and service engineers.

For spare sheets photocopy the forms or go to www.thespringfieldgroup.net, sign up and head to Your Account > Downloads section of the website.

Record of Events

Use this page to record any events occurring within your kitchen ventilation system. Record the time and date as this may be useful for fault finding for the service engineer too, when required.

Typical examples are -

- Daily clean
- Weekly clean
- Engineer visit
- System fault

Maintenance Check Sheet

These are the sheets which are mostly used as they contain the most information. Specifically record the task/information recorded in the record of events.

Typical examples are -

- Canopy clean
- Filter clean
- Gas interlock test
- E t c ...

Instructions

Typical example of a log in the record of events and maintenance log sheet. Note cross referencing.

Maintenance Record

RECORD OF EVENTS

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Springfield Group					
Date	Time	Event (daily clean, gas interlock test, system fault, engineer visit etc.)	Defects Observed (Circle)	Action Taken	Recorded By (Initial & Sign)
01/01/21	15:00	Daily Clean	YES/NO ☒	—	SG Springfield
02/01/21	21:00	Clean & Gas interlock test	YES/NO ☒	—	SG Springfield
			YES/NO		
			YES/NO		

Springfield Group			GAS INTERLOCK TEST			CANOPY CLEANING			CLADDING			COWLS, VENTS FREE FROM OBSTRUCTION			CARBON FILTER			ESP UNIT(s)			UV UNIT(s)			DUCTING WHERE VISIBLE AND ACCESSIBLE			SUPPLY AIR FILTERS			ODOUR NEUTRALIZATION UNIT			ENGINEER VISIT			COMMENTS ADD GREATER DETAIL IN THE MAINTENANCE RECORD		
DATE	TIME	PERSON RESPONSIBLE	Supply Fan	Extract Fan	Stop Buttons	Condition	Canopy External	Canopy Internal	Grease Pot	Canopy Filters	Overall Condition	Canopy Area	Deep Clean	Supply Fan	Extract Fan	Pre Filter Check	Pre Filter Replace	Carbon Filter Check	Carbon Filter Replace	External Clean	Internal Clean	Collector Cell Clean	Post Filter Clean	Pre Filter Clean	Power Light On	Clean	Leaks	Diffuser Mounted	AHU Mounted	Inspected	Topped up	ENGINEER VISIT						
01/01/21	15:00	Springfield					✓		✓			✓																						All left clean & tidy				
02/01/21	21:00	Springfield	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓																					Interlock okay, clean					

Figure 12 - Maintenance Log Sheet

Good housekeeping, regular grease filter cleaning, pre-filters change monthly in the carbon unit etc, will give you a longer working system and avoid odour nuisance to neighbours and local councils.

Never run your system with these filters removed, this will allow grease to extract down your system and coat everything with grease and cause odour and leaking.