Fan Services
Commercial Kitchen Extraction and Ventilation Experts

Email: info@fanservices.co.uk |
Website: www.fanservices.co.uk |
Office: 0203 539 1475| **After Hours:** 0759 500 3000 |

95-99 Field End Road,

HA5 1QG

24/04/2023

KITCHEN EXTRACTION & ODOUR CONTROL SYSTEM PROPOSAL

Fan Services was asked to carry out a site survey and put together a proposal for the extraction system at the above address:

The above address will be set across 2 shops with each shop having 5 small kitchens on each side. The kitchen will be serving worlds food to eat in and take away.

There will be 2 X identical extraction systems serving both areas, below you can find the proposal for each system:

After concluding the odour risk assessment under the DEFRA guidance, the total score for each system is 30 which leads to high level of odour filtration (please see attached Odour risk assessment).

Above the cooking equipment on each unit, a stainless-steel extractor hood canopy 2,000mm long x 1,200mm deep.

The canopies are manufactured in 304 grade with external dull polish grain and internal filter housing to removable/washable baffle type grease filters.

Coil canopy grease control filters (first stage filters) of a re-usable stainless-steel type design. There will be sufficient primary grease filters fitted to cover the complete length of the canopy face above the cooking ranges which are highly efficient at grease removal (please find the attached data sheets of the filters).

The main ductwork on top of the extractor hood canopies will incorporate the second stage of filtration which is 2X Plasma-Clean-Xtract-4200 which will inject ozone into the extract ductwork.

These will treat the odour emissions, via an oxidation reaction. This location closest to the source of the odours, will allow the maximum dwell time for the ozone to react with the emissions in the extract ventilation ductwork and ensure that adequate dilution takes place before the plume interacts with a receptor.

The ozone unit will be interlocked so that it only operates when the extract fan is operating. (Please see attached tech spec for Plasma-Clean-Xtract-4200).

The ductwork after the canopies will exist the building get connected to third stage of filtration which is a fine filter box such as G4 Pleated Panel Filters and Carbon bag filters (please see attached tech spec for fine filter).

The filter housing unit will be designed to ensure ease of access for maintenance and to provide a good seal around the filters to prevent gases bypassing the filters.

The filtration unit will then be connected to Helios GBD 710-4-4 extractor fan with an inverter speed controller and overheat protection. (Please see attached fan technical specification).

The fan will be mounted on using anti vibration rubber mountings and connected to ducting using flexible connectors to eliminate vibration levels.

The 600mm ductwork will run vertically to terminate one meter above the roof level with high velocity jet accelerator as per the drawings.

A sound attenuator would be installed after the fan (atmosphere outlet side) type Acustica R02-05-1800 to achieve the insertion loss as per the acoustic report.

The system will be designed and installed in accordance with EMAQ & DW172.

CLEANING AND MAINTAINCE SCHEDULE

1- Extractor hood canopy and baffle filters to be cleaned weekly.

2- G4 Filter to be replaced every week.

3- Carbon bag to be replaced every 2 weeks.

4- Plasma-Clean-Xtract-4200 ozone generator to be serviced once a year as per manufacturer recommendation.

5- TR19 extractor system, ductwork cleaning to be scheduled every 3 months.

We hope this is of assistance and await your further instruction.

Kind regards

Jay Zen

Appendix 3: Risk Assessment for Odour

Odour control must be designed to prevent odour nuisance in a given situation. The following score methodology is suggested as a means of determining odour control requirements using a simple risk assessment approach. The odour control requirements considered here are consistent with the performance requirements listed in this report.

Impact Risk	Odour Control Requirement	Significance Score*
Low to Medium	Low level odour control	Less than 20
High	High level odour control	20 to 35
Very high	Very high level odour control	more than 35

* based on the sum of contributions from dispersion, proximity of receptors, size of kitchen and cooking type:

Criteria	Score	Score	Details
Dispersion	Very poor	20	Low level discharge, discharge into courtyard or restriction on stack.
	Poor	15	Not low level but below eaves, or discharge at below 10 m/s.
	Moderate	10	Discharging 1m above eaves at 10 -15 m/s.
	Good	5	Discharging 1m above ridge at 15 m/s.
Proximity of receptors	Close	10	Closest sensitive receptor less than 20m from kitchen discharge.
	Medium	5	Closest sensitive receptor between 20 and 100m from kitchen discharge.
	Far	1	Closest sensitive receptor more than 100m from kitchen discharge[1].
Size of kitchen	Large	5	More than 100 covers or large sized take away.
	Medium	3	Between 30 and 100 covers or medium sized take away.
	Small	1	Less than 30 covers or small take away[1].
Cooking type (odour and grease loading)	Very high	10	Pub (high level of fried food), fried chicken, burgers or fish & chips. *Turkish, Middle Eastern or any premises cooking with solid fuel*
	High	7	Vietnamese, Thai, Indian, *Japanese*, *Chinese, steakhouse*
	Medium	4	Cantonese, *Italian, French, Pizza (gas fired),*
	Low	1	Most pubs (*no fried food, mainly reheating and sandwiches etc*), *Tea rooms*[1]

Note 1: A planner may take a pragmatic view when assessing whether certain low risk kitchens require any odour abatement to be fitted. In reaching this decision the Planner may consider the nature of the food being cooked and/or the size of kitchen and/or its location.

Coil Filters
Grease Control

plasmaclean
Creating a cleaner, safer environment

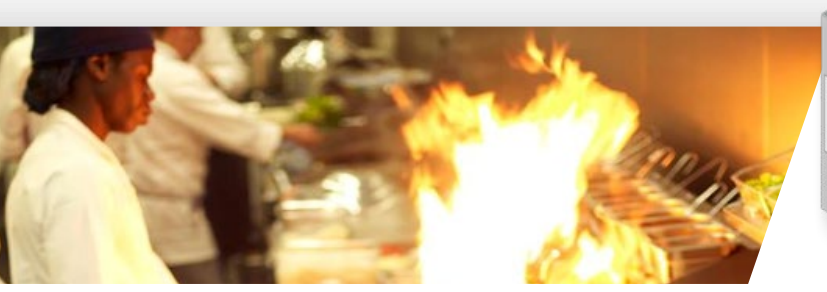
Three times the performance of traditional filters

Commercial kitchens using traditional baffle-type filters will remove just 20-40% of grease, but our filters capture 95% of grease particles from commercial kitchens in the extraction canopies.

This drives up productivity by making kitchens healthier and cleaner places to be.

Benefits

- Reduce fire risk
- Are easy to clean
- Significantly cut duct-cleaning
- Reduced requirement for downstream maintenance
- Offer an ROI within 12 months



Ask us about

Coil Filter adapters

Our Coil Filter adapters allow retrofitting for any commercial kitchen project

plasma-clean.com · ask@plasma-clean.com | +44 (0)161 870 2325
Earl Business Centre, Dowry Street, Oldham, OL8 2PF
@PlasmaClean /Plasma-Clean-LTD

CIBSE CPD FEA Foodservice Equipment Association Information Involvement Influence BESA Building Engineering Services Association

Coil Filters
Grease Control

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Creating a cleaner, safer environment

Introduction to Kitchen Ventilation from Plasma Clean

Grease, odour and smoke emissions produced by commercial kitchens are an increasing concern both for existing establishments and for new build projects. Therefore, it is essential to implement a suitable grease and odour control strategy - as a matter of urgency - to ensure that the kitchen emissions comply with DW/172 and DEFRA guidance. This is not just about protecting the environment from nuisance emissions, but also reducing grease build up in the ductwork, which could present a fire risk if left untreated.

Plasma Clean's Kitchen Ventilation range consists of a range of modular solutions for grease, smoke and odour control which can be used alone or can be combined to provide a site-specific solution. For example, a pizza restaurant will not require the same level of grease, odour and smoke control equipment as a char-grill steak house.

Starting at the canopy, our Coil Filters are designed to capture 95% of grease particles; between 55-70% more than traditional baffle-type filters. Our Xtract range releases natural ozone - a superb disinfectant and odour neutraliser - directly into kitchen ventilation systems. Our Techniclean range includes the canopy mounted **Techniclean CM**, combining high intensity UV-C light with ozone technology to break down odour and grease in the air, as well as the **Techniclean Mini**, **5000** and **7500** models; perfect for new projects or retrofitting into existing ductwork. High levels of grease and smoke particulate are treated by the Electrostatix and combining Electrostatic Precipitation with UV-c, are our ESP UV units, provide highly efficient removal of grease, smoke and odour from a compact unit.

For a final polish - removing residual ozone - Activated Carbon filters are the ideal choice for low level extraction. Our Carbon Housing allows Activated Carbon filters to sit in 3, 6 or 9 easily mountable Sitesafe Discarb units.

When it comes to Control Panels, our **Air Flow Interlock** range is used to synchronise the operation of all of our Kitchen Ventilation products with detected air flow. The equipment is automatically turned off when the system is shut down, preventing accidental exposure to UV-C light and ozone, whilst ensuring energy efficiency for the system. Options are available for Lamp Life Indicators, Lamp Fault and BMS interface.

Filtration with Coil Filters from Plasma Clean

There are four stages to the operation:

1. Oil vapours condense on the large surface area of the filter coils as heat is transferred from the air
2. Air is spun into a vortex and the droplets of oil and grease continue in a straight line
3. Oil and grease particles then collide with the filter coils, and the oil-coated filter surface traps more oil and grease due to its enhanced viscosity
4. Oil and grease droplets simply settle due to gravity and are collected for recycling

Installation

Installation is simple, if you are producing a new canopy, let us know and we can advise on the design and dimensions of the Coil Filter mounting plate.If you have an existing canopy, then an adaptor plate is available to enable the Coil Filters to be installed into existing kitchen canopies, replacing existing low efficiency baffle type filters. Multiple units can be joined together for increased volume or efficiency.

Accessories

Depending on the level of cooking, the system can be washed daily or as part of a weekly cleaning routine.

Maintenance

Adaptor plate for retrofit

Warranty

1 year Manufacturer's Warranty (subject to terms and conditions)
Extended 3 year Warranty (care plan available)

Terms

In accordance with our standard terms of business.

Technical Specifications & Data

	CF 375	CF 475
Dimensions (HWD)	159 x 395 x 170mm	159 x 495 x 170mm
Air Volume	0.24 m^3/s	0.34 m^3/s
Face velocity	4-6 m/s	
Pressure drop	200Pa	
Noise	3.8<50dB	
Finish	Grade 304 stainless steel	

plasma-clean.com · ask@plasma-clean.com | +44 (0)161 870 2325
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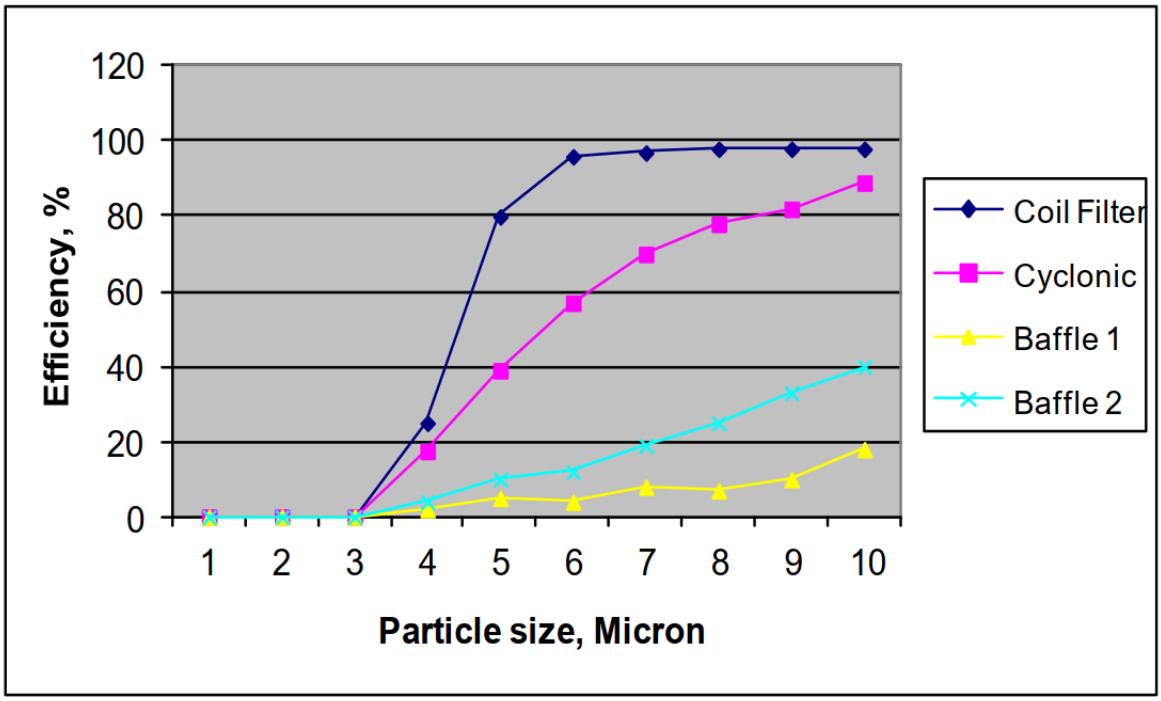
@PlasmaClean /Plasma-Clean-LTD

INDEPENDENT TESTS

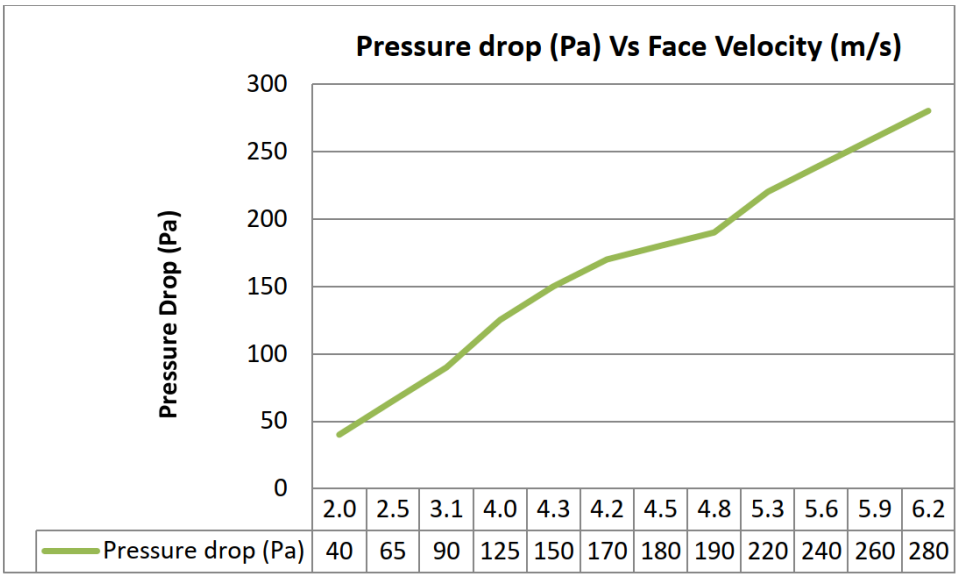
Tested by Deutsche Montan Technologie (DMT) organisation according to the VDI 2052 test.

An analysis of the results shows that the efficiency is 95% for all particle sizes above 5 microns. An analysis of these results according to the inverse law shows that overall grease recovery efficiency for the filter for all of the non-gaseous grease entering the filter Is over 95% at 100% rated airflow. This compares with just 54% for reference filter used in the test.

The difference shows that the reference filter passed 4.5 times as much grease into the duct as the Coil Filter.



STATIC PRESSURE:



PROCESS CATEGORY	CLASS 1	CLASS 2	CLASS 3
Application	Boiling operations without sudden bursts of vapour (cooking pots, bay marie's, steam ovens, etc.)	Conventional frying and similar processes emitting a steady flow of vapours (flat top grills, chip fryers, salamanders, etc.)	Open flame grilling, flame processes and processes emitting sudden surcharges of hot vapours (charcoal, gas fired open grills etc.)
Min capture vel. (m/s)	0.25 m/s	0.31 m/s	0.35 m/s
Min face vel. (m/s)	0.40 m/s	0.50 m/s	0.55 m/s

Xtract 4200
Odour Control

plasmaclean
Creating a cleaner, safer environment

Remove smells with a single unit

Chlorine bleach is powerful at removing odour and infection. But ozone is more powerful still.

Ask us about LEASING OPTIONS AVAILABLE ENQUIRE TODAY

3 Year Warranty Care Plan

*Plasma Clean is continuously improving its products and services and reserves the right to alter designs without prior notice

Some competitor units simply mask smells with a chemical perfume. But our Xtract system releases natural ozone directly into the kitchen ventilation system.

Ozone is a superb disinfectant and odour neutraliser that eliminates cooking smells at source, using ozonolysis. And it works around the clock – just change the filters every few months.

Benefits

- Affordable, space-efficient and robust
- Easy to install – no disruption to business
- Chemical-free
- Quiet
- Environmentally friendly and tested to EN13725:2003

Related products

Xtract 2100
The ideal product for achieving oxidation in smaller commercial kitchen spaces **Find out more**

Xtract 2100 Mini
The perfect solution for removing cooking smells in small, start-up kitchens **Find out more**

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CIBSE CPD FEA BESA

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Treatment with Ozone from Plasma Clean

Oxidation using ozone and activated oxygen ions is used to treat odour emissions from commercial and industrial kitchen processes (DW/172: Specification for Kitchen Ventilation Systems and DEFRA, 2005: Guidance on the Control of Odour and Noise from Commercial Kitchen Exhaust Systems). The unit has been specifically designed for use in commercial kitchens. The system injects ozone into the kitchen extraction canopy or ductwork where it reacts with odours.

It is recommended to locate the units with an injection point located closest to the source of odours in order to maximize dwell time. In any case the dwell time must be no less than 2 seconds. The system is powered via a fused spur which is to be interconnected to air flow or the main extraction fan control to ensure that the unit(s) only operate when the main fan is operating.

Installation

It is recommended to locate the units with an injection point located closest to the source of odours in order to maximize dwell time. In any case the dwell time must be no less than 2 seconds. The system is powered via a fused spur which is to be interconnected to air flow or the main extraction fan control to ensure that the unit(s) only operate when the main fan is operating. Multiple units can be joined together for increased volume or efficiency.

Accessories

Installation kit
Remote monitor

Maintenance

A Plasma Clean service contract is available (please enquire) and in any case Plasma Clean would recommend:

- Routine cleaning of the housing and exchange of the prefilter when spent
- A yearly service is recommended

Warranty

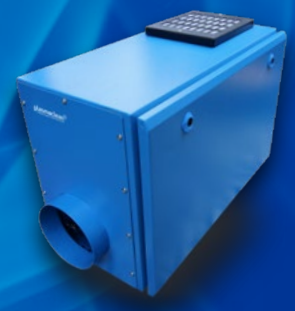
1 year Manufacturer's Warranty (subject to terms and conditions)
Extended 3 year Warranty (care plan available)

Terms

In accordance with our standard terms of business.

Technical Specifications & Data

Dimensions (HWD)	400 x 600 x 300mm
Control lights	Air Flow LED indicators
Capacity max.	Up to 3.0 m³/s (subject to grease and odour loading)
Volume flow rate (through unit)	0.066 m³/s
Pre-filtration grade	G4
Supply	230Vac/ 1 phase / 50Hz
Power	570W
Weight	25kg
Pressure drop	N/A (ozone injection)
Safety	Internal flow switch Recommended interlock to fan control
Finish	Powder coated mild steel
Approvals	Plasma Clean air cleaners comply with current CE requirements and EMC standards. Certificates are available on request.



AIRCLEAN

YOUR AIR FILTER MANUFACTURER

P.O. BOX 147,
MAIDSTONE, ME14 2LA.

TEL:01622 832777
FAX:01622 832507

sales@airclean.co.uk www.airclean.co.uk

Pleated Panel Filters

Applications

The Pleated Panel is a medium efficiency disposable filter, suitable for ventilation and air conditioning systems which require a higher efficiency and greater dust holding capacity than can be achieved with glass or synthetic panels.

The Pleated Panel can be used where glass panels are undesirable, such as in the food industry and hospitals.

Construction

Pleated filters consist of a dry non-woven fabric media, pleated to give an extended surface area, producing a low initial resistance for the same air volume.

The pleated assembly is contained within either a rigid all cardboard casing, or a cardboard frame with perforated cap-punch retaining grids.

Technical

Filter Classification:	Grade G4 to EN779.
Pleated Material Flamability :	Fire Resistant to :- Underwriters Laboratories Standard 900 class 2
Maximum operating temperature:	100°C (212°F)
Dust Holding Capacity:	840 g/m^2 (2") and 1260 g/m^2 (4") to EN779

Resistance to Airflow

Face Velocity										
m/s **fpm**	1.25 250		1.50 300		2.0 400		2.5 500		3.0 600	
Pressure Drop	Pa	"wg	Pa	"wg	Pa	"wg	Pa	"wg	Pa	"wg
2" Panel	22	0.09	27	0.11	50	0.20	70	0.28	-	-
1" Panel	25	0.10	30	0.12	55	0.22	75	0.30	87	0.35

Recommended discard resistance is 125 Pa (0.5"wg) in excess of clean resistances shown above for a 2" panel and 150 Pa (0.6"wg) for 4" panel.

AIRCLEAN

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P.O. BOX 147,
MAIDSTONE, ME14 2LA.

TEL:01622 832777
FAX:01622 832507

sales@airclean.co.uk www.airclean.co.uk

Capacity Chart (2" Pleated Panels)

Data based on Face Velocity of 2.5 m/s (500 fpm)

SIZE	SIZE	Flow Rate
OT Inches	Actual mm	m^3/s
10 x 10	242 x 242	0.14
12 x 12	289 x 289	0.20
15 x 15	369 x 369	0.33
18 x 18	445 x 445	0.48
20 x 10	495 x 242	0.29
20 x 16	495 x 394	0.48
20 x 20	495 x 495	0.60
25 x 16	620 x 394	0.60
25 x 20	620 x 495	0.76
24 x 12	594 x 289	0.43
24 x 20	594 x 495	0.73
24 x 24	594 x 594	0.88

Actual Face Size = Nominal Size less 6mm (0.25")

Capacity Chart (4" Pleated Panels)

Data based on Face Velocity of 3.0 m/s (600 fpm)

SIZE	SIZE	Flow Rate
OT Inches	Actual mm	m^3/s
10 x 10	242 x 242	0.18
12 x 12	289 x 289	0.25
15 x 15	369 x 369	0.41
18 x 18	445 x 445	0.60
20 x 10	495 x 242	0.36
20 x 16	495 x 394	0.58
20 x 20	495 x 495	0.73
25 x 16	620 x 394	0.72
25 x 20	620 x 495	0.91
24 x 12	594 x 289	0.51
24 x 20	594 x 495	0.87
24 x 24	594 x 594	1.05

Holding Frames and Casings

Holding frames and casings for Disposable Pleated Panels are available singularly or in multiples, and can be manufactured to suit non-standard sizes and special applications.
See leaflets (code AC8) for full technical information.

Code AC1/3b Ref 06/11

Carbon Filter Bag

Description:

592x592x380 6 pocket 25mm header Carbon filter bag giving a combination of particle and low level gas and odour removal

Construction:

Galvanised steel header frame holding pockets made from an impregnated carbon synthetic media

Efficiency:

G3/G4 to BS EN 779

Rating:

3400 m3/hr @ 60 Pa

Carbon Loading:

78 grams / m2

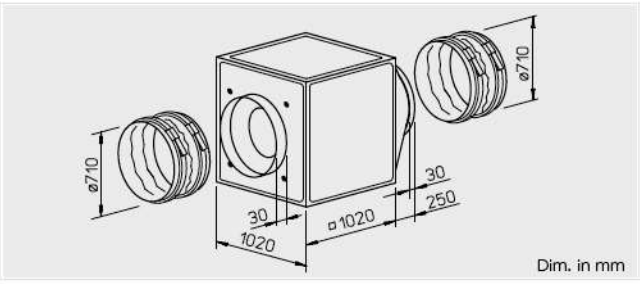
The Filter Business Ltd
Unit 8 Ardley Works
London Road
Billericay CM12 9HP

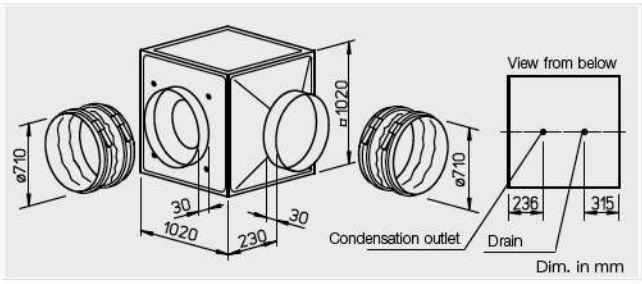
Tel: 01277 634637 / 01277 523655
info@thefilterbusiness.com
www.thefilterbusiness.com
VAT GB868555077

GB

GB T120

Designed for moving dirty, humid and hot air up to max. 120° C.
Motor located outside the air flow.





■ Special features of types GB T120

- Designed for moving dirty, humid and hot air volumes up to max. 120° C.
- Motor located outside of air flow.
- Temperature insulated partition panel between motor and impeller, lined with 20 mm thick, flame-retardant mineral wool.
- Easily accessible motor and impeller unit, removable without disassembling the system components.
- Inspection cover with handle, simply remove for cleaning and maintenance.
- Condensate collector with condensate spigot included in delivery. Drill hole for rain drainage (accessories) for outdoor installation is prepared.

□ Assembly GB T120

Installation must be carried out with condensation discharge showing downward. Flexible assembly by three possible centrifugal discharge directions via the discharge adapter.
Outdoor installation is possible using outdoor cover hood and external weather louvers (accessories).

■ Feature

□ Assembly of types GB

Arbitrary installation position and flexible assembly by five possible discharge directions via the discharge adapter.
For wall mounting the wall bracket (accessories) have to be used. Outdoor installation is possible using outdoor cover hood and external weather louvers (accessories).

■ Specification of both types

□ Casing

Self-supporting frame construction from aluminium hollow profiles. Double-walled side panels from galvanised sheet steel, lined with 20 mm thick temperature insulating and flame-retardant mineral wool. Intake cone for ideal inflow as well as spigot and flexible sleeve (for the respective max. permissible air flow temperature) for duct connection. With discharge adapter (from square to circular) on the pressure side for low-loss discharge and flexible sleeve to reduce vibration transmission. Simple positioning by standard crane hooks.

□ Impeller

Smooth running backward curved aluminium centrifugal impeller highly efficient and direct driven. Energy efficient with a low noise development. Dynamically balanced together with the motor to DIN ISO 1940 Pt.1 – class 6.3.

□ Motor

Maintenance-free external rotor motor or IEC-standard motor protected to IP 54/55. With ball bearings and interference-free as standard.

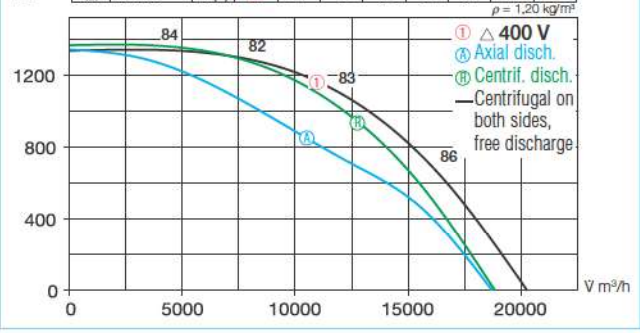
□ Electrical connection

Standard terminal box (IP 54/55) fitted on the motor; with GB T120 fitted on the motor support plate.

Type	Ref. no.	Air flow volume (FID)	R.P.M.	Sound press. case breakout	Motor power (nominal)	Current full load	Current speed controlled	Wiring diagram	Maximum air flow temperature Full load	Maximum air flow temperature controlled	Weight (net)	5 step transformer controller with mot. protect. unit		5 step transformer controller without mot. protect. unit		Full motor protection unit using the thermal contacts	
		V m³/h	min⁻¹	dB(A) in 4 m	kW	A	A	No.	+°C	+°C	kg	Type	Ref. no.	Type	Ref. no.	Type	Ref. no.
3 Phase motor, 3~, 400 V, 50 Hz, Y/△ wiring, protection to IP 55																	
GBD 710/4	5529	20285	1465	51	5.97	10.20	—	499	70	—	170	—		—		**MD**	5849
2 speed motor, 3 Phase motor, 400 V / 3 ph. / 50 Hz, Y/△ wiring, protection to IP 54																	
GBD 710/6/6	5525	16500/19000	690/890	46	1.55/2.45	2.90/4.70	4.70	867	50	50	157	**RDS 7**	1578	**TSD 7,0**	1504	**MD**	5849
3 Phase motor, 3~, 400 V, 50 Hz, protection to IP 54																	
GBD 710/4 T120	5756	18200	1465	55	5,89	10.4	—	499	120	—	188	—		—		**MD**	5849

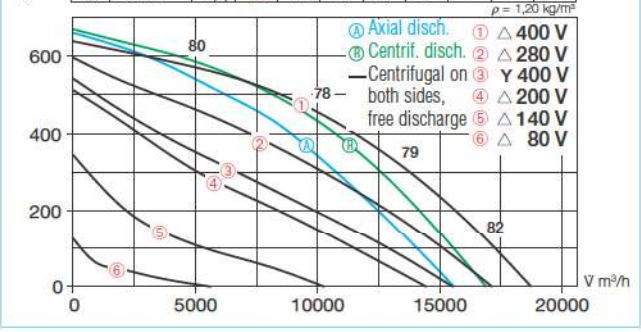
GBD 710/4

Frequency		Hz	Total	125	250	500	1k	2k	4k	8k
L_{WA}	Case breakout	dB(A)	71	67	68	58	56	53	48	41
L_{WA}	Intake	dB(A)	82	70	73	77	76	74	71	60
L_{WA}	Exhaust	dB(A)	88	71	73	83	84	81	73	63



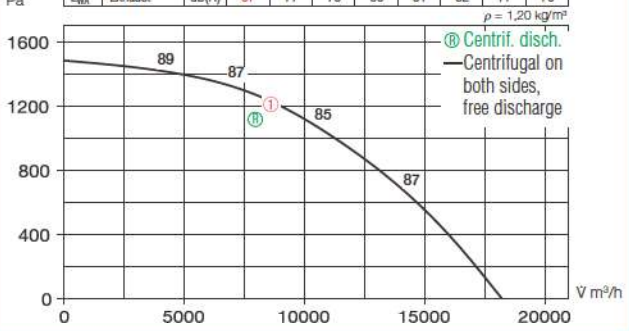
GBD 710/6/6

Frequency		Hz	Total	125	250	500	1k	2k	4k	8k
L_{WA}	Case breakout	dB(A)	66	63	62	53	51	48	43	36
L_{WA}	Intake	dB(A)	79	62	64	74	75	72	64	54
L_{WA}	Exhaust	dB(A)	83	71	75	80	78	77	72	61



GBD 710/4 T120

Frequency		Hz	Total	125	250	500	1k	2k	4k	8k
L_{WA}	Case breakout	dB(A)	75	70	67	65	68	65	64	61
L_{WA}	Intake	dB(A)	86	73	76	76	81	81	67	69
L_{WA}	Exhaust	dB(A)	87	77	78	80	81	82	77	70



Motor protection

Types GBD with thermal contacts embedded on the terminal strip, which must be wired with the full motor protection device. Type GBD T120 with PTC thermistor for direct wiring with the full motor protection device or frequency inverter FU-BS (see table below, accessories).

Speed control

All types (except GB T120) are speed controllable by voltage reduction using a transformer controller. The 3-phase models can also be 2 speed controlled by Y/△ switch or full motor protection unit M4; Type GBD T120 is exclusively controllable via frequency inverter with Sine filter. The duties at different speeds are given in the performance curve.

Sound levels

Total sound power levels and the spectrum figures in dB(A) are given for:

- Sound level case breakout
- Sound level intake
- Sound level exhaust

In the table below as well as underneath the performance curve you can find additionally the sound pressure levels at 4 m (free field conditions).

Accessories of both types

Anti vibration mounts for installation indoors. Set of 4.

SDD-U	Ref. no. 5627

External weather louvers to cover exhaust opening.

GB-WSG 710	Ref. no. 5641

Outdoor cover hood for outdoor installation.

GB-WSD 710	Ref. no. 5750

Specific accessories

for types GB

Condensate collector with condensate spigot for pipe connection.

GB-KW 710	Ref. no. 5646

(Condensate collector with condensate spigot included in delivery with GB T120).

On/Off and 2-speed switch for 3-phase Y/△ motors.

Type DS 2 [1]	Ref. no. 1351

[1] full motor protection unit recommended: MD Ref. No. 5849

for types GB T120

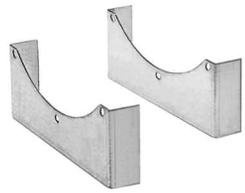
Rain drainage for outdoor installation (drill holes for rain drainage is already prepared).

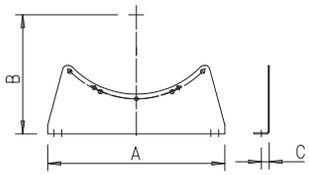
GB-RA	Ref. no. 9418

Information	Page
Information for planning	10 on
General techn. information, speed control	15 on
Accessory-Details	**Page**
Speed controller and full motor protection unit	525 on

MK

Dimensions in mm





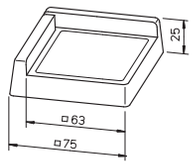
Mounting feet
To fix Axial/VAR cased fans on ceiling, wall or floor. Made from galvanised sheet steel or hot dipped galvanised steel. Fixing holes fit casing flanges.
Set includes a pair of feet, nuts and bolts.

Note:
If motors of high weight are installed, an extension duct (VR...) is recommended to move the centre of gravity within the mounting feet. Mount feet on the outer flange.

Type	Ref. No.	A	B	C	Weight in kg
MK 200-225	1446	310	208/220	20	1.5
MK 250-280	1447	340	227/245	20	1.7
MK 315-355	1448	380	281/300	25	2.2
MK 400-450	1449	360	311/335	25	2.6
MK 500-560	1450	570	383/415	25	5.3
MK 630	1333	600	465	30	8.5
MK 710	1372	670	515	35	10.5
MK 800	1373	680	565	35	15.5
MK 900	1374	760	625	35	18.0
MK 1000	1375	840	690	35	19.5

SDD-U

Dimensions in mm



Anti vibration pads
The rubber mounting pads SDD-U are suitable as a base for installation of fans on flat, horizontal surfaces. They reduce the direct noise and vibration transmission to the building structure.

One set consists of 4 elements, which are positioned individually under the corners of the fan unit.
Maximum compression:
40 kg/pad = total 160 kg.

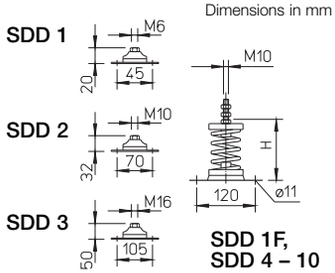
SDD-U Ref. No. 5627

SDD

Dimensions in mm

SDD 1 – 3

SDD 1F, 4 – 10



Anti vibration mounts for compression
To reduce noise and vibration transmission of fans installed on horizontal surfaces.
Simple installation in combination with feet MK (accessory). Select size according to fan weight see table).

Rubber elements are suitable for small to middle weights and ambients up to + 60 °C.
Spring elements are suitable for higher temperatures above + 60 °C (e.g. smoke extraction).

Type	Ref. No.	Maximum fan weight in kg	H Height in mm	Spring element	Contents 1 set = 4 pieces
SDD 1	1452	80	*		
SDD 1F	1942	70	112 – 82	●	
SDD 2	1453	180	*		
SDD 3	1367	750	*		
SDD 4	1944	130	112 – 86	●	
SDD 5	1924	210	112 – 86	●	
SDD 6	1926	400	112 – 80	●	
SDD 7	1928	580	112 – 82	●	
SDD 8	1930	900	112 – 82	●	
SDD 9	1934	1300	112 – 85	●	
SDD 10	1951	1800	112 – 88	●	

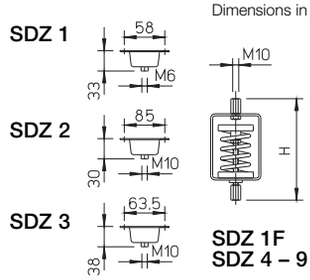
* shown in dimensional drawing

SDZ

Dimensions in mm

SDZ 1 – 3

SDZ 1F, 4 – 9



Anti vibration mounts for suspension
To reduce noise and vibration transmission of fans installed hanging from ceilings.
Specification as model SDD.

Important note for installation!
Make sure that fan system is well balanced (centre of gravity of heavy motor may cause uneven loading of mounts).

Type	Ref. No.	Maximum fan weight in kg	H Height in mm	Spring element	Contents 1 set = 4 pieces
SDZ 1	1454	60	*		
SDZ 1F	1943	70	190 – 220	●	
SDZ 2	1455	160	*		
SDZ 3	1366	300	*		
SDZ 4	1945	130	190 – 216	●	
SDZ 5	1925	210	190 – 216	●	
SDZ 6	1927	400	190 – 221	●	
SDZ 7	1929	580	190 – 220	●	
SDZ 8	1931	900	190 – 220	●	
SDZ 9	1935	1300	190 – 217	●	

* shown in dimensional drawing

Bays 2 & 3 Pattenden Lane, Marden, TN12 9QS. T: 01622 832777 F: 01622 832507

General Purpose Bag Filters
Grades G3, G4, and M5 to EN779:2012

Applications

General Purpose Bag Filters offer a low to medium filtration efficiency suitable for fresh air conditioning and ventilation systems where a greater dust holding capacity is required than a panel air filter can offer.

Typical applications for General Purpose Bag Filters would be as a pre filter to high efficiency filters, prior to a fan or heating / cooling coil, or as a pre filter to an Activated Carbon Filter.

Description

The General Purpose Multi Pocket Bag Filter comprises a corrosion resistant heavy gauge galvanised header frame housing the filter media, which is supported by a copper coated rod assembly and tags which keep the media pockets from blinding each other. The pockets are of a lofted non-woven synthetic material ensuring a high dust holding capacity.

Technical

Filter Classification : Grade G3, G4 or M5 to EN779:2012 (Previously G3, G4, and F5 to EN779:2002)
Maximum Operating Temperature : 100°C (212°F)
Flammability : Flame Retardant to DIN 53438, Classes F1 & K1
Suitable for use in the food industry.

STANDARD GENERAL PURPOSE BAG FILTER SIZES

Size			Flow Rate	Part Numbers		
Nominal (actual)	Bag Length		m^3/s	GP3 Grade G3 to EN779	GP4 Grade G4 to EN779	MP5 Grade M5 to EN779
	inch	mm				
24H x 12W (594H x 292Wmm) 2 Pockets	6	150	0.24	1410301	1410401	1410501
	9	225	0.35	1410302	1410402	1410502
	12	300	0.47	1410303	1410403	1410503
	15	375	0.59	1410304	1410404	1410504
	18	450	0.71	1410305	1410405	1410505
	24	600	0.80	1410306	1410406	1410506
24H x 20W (594H x 492Wmm) 3 Pockets	6	150	0.40	1410311	1410411	1410511
	9	225	0.53	1410312	1410412	1410512
	12	300	0.80	1410313	1410413	1410513
	15	375	0.88	1410314	1410414	1410514
	18	450	1.20	1410315	1410415	1410515
	24	600	1.39	1410316	1410416	1410516
24H x 24W (594H x 594Wmm) 4 Pockets	6	150	0.47	1410321	1410421	1410521
	9	225	0.71	1410322	1410422	1410522
	12	300	0.94	1410323	1410423	1410523
	15	375	1.18	1410324	1410424	1410524
	18	450	1.41	1410325	1410425	1410525
	24	600	1.65	1410326	1410426	1410526

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Notes
Standard Bag Filter Header Depth = 22mm (16mm deep header available upon request)
Clean pressure differentials at Rated Flow: G3 = 40Pa, G4 = 50Pa, M5 = 63Pa
Recommended discard resistance is 200 Pa above clean resistance.
Non standard sizes are available upon request
Stainless Steel Header, Grade 304 available upon request (1410901)
Bag Loops for vertical or low airflows (1410902)

Holding Frames and Cases

Holding frames and casings for General Purpose Bag Filters are available singularly or in multiples, and can be manufactured to suit non-standard sizes and special applications.

See Catalogue Section 8 (code AC8) for full information.

Front Withdrawal Frame (1810)

MEZ Flanged Side Access Housing (1820)

Duct Mounted Filter Housing (1825)

Fully Welded Side Withdrawal Filter Housing (1840)

R02
Rectangular Silencers

R02 - 5 - Attenuator

Available in seven standard lengths R02 5 Rectangular Duct Mounted Silencers have excellent attenuation properties, achieved with sound absorbing infill splitters, retained in the attenuator casing by a perforated liner. The resistance to airflow is a function of the face velocity and length. It is not recommended to select the R02 5 Silencers with a face velocity above 3.5 metres per second without asking advice regarding re-generated self noise. We can advise on the selections and can perform system analysis to ensure the correct unit is specified.

- High performance rectangular duct silencer
- Seven standard lengths
- Many connection options
- Cross section dimensions in 1mm increments
- System pressure within ducted systems to 1500 Pa
- Special lengths on request

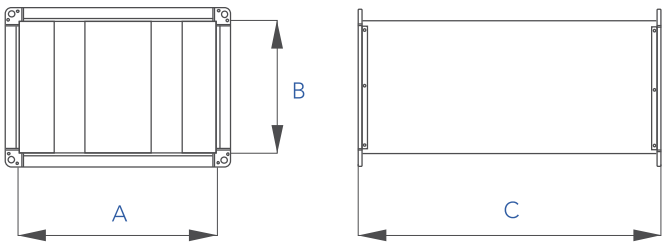
Insertion Loss (dB) - Centre Band Frequency

Product Code	Length (mm)	63 Hz	125 Hz	250 Hz	500 Hz	1000 Hz	2000 Hz	4000 Hz	8000 Hz
R02 - 5 - 600	600	4	6	11	19	24	23	18	12
R02 - 5 - 900	900	4	6	12	26	30	31	22	16
R02 - 5 - 1200	1200	5	9	18	32	40	39	28	19
R02 - 5 - 1500	1500	7	11	23	37	45	45	32	22
R02 - 5 - 1800	1800	8	13	25	44	50	50	37	24
R02 - 5 - 2100	2100	9	16	28	50	50	50	45	29
R02 - 5 - 2400	2400	11	19	33	50	50	50	50	32

Insertion loss data is derived from continual testing to BS4718 and other standards in independent UKAS certified laboratories, which includes where appropriate, re-generated or self noise testing in both forward and reverse flow conditions. If you request system analysis from our technicians all predictions will be assessed using the relevant certified insertion loss data together with relevant dynamic corrections.

Dimensional Data

Code	A Min	A Max	B Min	B Max	C Min	C Max
R02 - 5	100	1200	100	1200	400	2400



Resitance to Airflow (Pa)

Product Code	1.0m/s	1.5m/s	2.0m/s	2.5m/s	3.0m/s
R02 - 5 - 600	10	16	22	39	60
R02 - 5 - 900	10	16	23	40	62
R02 - 5 - 1200	11	16	24	40	64
R02 - 5 - 1500	11	17	25	40	66
R02 - 5 - 1800	11	18	26	42	67
R02 - 5 - 2100	12	19	26	43	69
R02 - 5 - 2400	13	19	28	48	71

T: 01206 852389 **E:** info@acoustica.co **W: acoustica.co**
2 Conder Way, Whitehall Industrial Estate, Colchester, Essex CO2 8JN

R02
Rectangular Silencers

Material & Finish

All components are manufactured from mill finish hot dip galvanised mild steel conforming to EN10327 (BS2989). To prevent erosion of absorbing materials, the R Series Silencers are fitted with perforated splitters manufactured from galvanised mild steel conforming to EN10327 (BS2989) R Series Silencers utilise acoustic grade mineral fibre absorbing infill and are manufactured to the HVCA specification DW144 class B and M&E 100 for sheet steel thickness and stiffening.

Pressure Up to 1500 Pascals positive and negative.
Temperature -12° to +100°C.
Location Internally & externally mountable.

Melinex Lining (Optional)

Where moist conditions exist (e.g. process systems) or for critically clean applications (e.g. hospitals) the sound absorbing material may be required to be fully sealed by Melinex lining to prevent fibre migration. This will however, effect the acoustic performance of the silencer. Please contact us to discuss your requirements.

Alternative Specification

The above specification refers to our standard, stock range. We can also supply custom materials such as 304 and 316 grade stainless steels, cold reduced (CR4) mild steel and aluminium.

Dimensional Data

Units smaller than the minimum and larger than the maximum with the same aero-acoustic performances are available, but may have different manufacturing methods and are therefore coded accordingly.

Connection Options	
MEX Flanges	20, 30 & 40mm
Ductmate Flanges	25 & 35mm
Circular Spigot	"SPIRAL FIT" circular spigots, can be offset.
Rectangular Spigot	Rectangular spigots, can be offset
Raw	Plan end for slip jointing etc.

Installation

For recommendations for the support of the fan the principles of Part Six (pages 43-46) of the HVCA DW144 standard should be followed. Always use the correct size bolts as specified in the dimensional data table above. The arcuate holes are sized to allow the metric thread sizes to be utilised, for example, for an M10 fixing, the slot is made 19mm long by 13mm wide. Please contact us to confirm the suitability of any fan manufacturers product.

Equipment	Location
Centrifugal Fans	Position at least one duct width from inlet or outlet.
Axial Fans	Position at least one duct width from inlet or outlet.
Mixed Flow Fans	Position at least one duct width from inlet or outlet.
Ductwork Bends	Position at least three duct widths from inlet or outlet. One duct width will increase resistance by 90%, two by 20%. Ensure splitters are in parallel plane to bend.
Ductwork Reducers	Direct couple only with reducers of maximum 15° cheek slope.
Finned Coils & Filters	Leave 500mm plenum between silencer and coil or filter, and suitable reducer as specified in HVCA DW/144 1998.

Cleaning & Maintenance

Should the product require routine cleaning we recommend low-pressure air blasting, vacuuming or wiping the exposed surfaces with a damp cloth. It is not unusual for "White Zinc Oxide" to develop on galvanised silencers when the zinc in the galvanising reacts electrolytically with moisture. Silencers are of a passive nature and as such require no routine maintenance or lubrication.

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