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 |

33 Theobalds Road,

WC1X 8SP

22/09/2022

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:

After concluding the odour risk assessment under the DEFRA guidance, the total score was 23 which leads to high level of odour filtration (please see attached Odour risk assessment).

The restaurant is serving international buffet and our proposal as follows:

Above the cooking equipment, a stainless-steel extractor hood canopy, 2,000mm long x 1,200mm deep X 500mm High.

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

Baffle filters are (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.

The ductwork from the canopy hood will connect to second stage of filtration which is a fine filter such as G4 Pleated Panel 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 ductwork will incorporate a third stage of filtration which is an ozone odour control unit such as OC2 which will inject ozone into the extract ductwork just after the canopy and before the fan.

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 the OC2).

The ductwork will then be connected to Flaktwoods Compac 355 extractor fan whish is located internally with 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 315mm diameter ductwork will then exit the building and run verticaly to temrnaite one meter above the roof level with high velocity jet accelerator.

2X sound attenuator would be installed after the fan (atmosphere outlet side) type Acustica CP01-M25-120 to achieve the insertion loss as per the acoustic report (please see attached Sound attenuator details).

The system will is designed and installed in accordance to DW172 and Defra Guidance.

CLEANING AND MAINTAINCE SCHEDULE

1- Extractor hood canopy and baffle filters to be cleaned weekly.
2- G4 Filter to be replaced every week.
3- OC2 ozone generator to be serviced once a year as per manufacturer recommendation.
4- TR19 extractor system, ductwork cleaning to be scheduled every 4 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.

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.

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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

INNOVATIONS
odour control solutions

ODOUR CONTROL

OC INNOVATIONS - OC2

Process Information

Oxidation using ozone and activated oxygen ions is used to treat odour emissions from commercial and industrial kitchen processes (DEFRA, 2005: Guidance on the Control of Odour and Noise from Commercial Kitchen Exhaust Systems).

The OC2 has been specifically designed for use in commercial kitchens. The system injects ozone into the kitchen extraction canopy or associated duct work where it reacts with odours, which are oxidized in a chemical reaction, which results in the production of carbon dioxide and water vapour. The ozone itself is consumed during the process and is converted back into oxygen.

The benefits of purchasing an OC2 unit over traditional UV/Ozone systems are as follows:

- Compact, lightweight and quiet operation so is less obtrusive
- Quick and easy low cost installation
- Low capital and running costs – up to 50% less than traditional UVC systems
- Injection into ductwork – adding negligible back pressure to the system so requiring less energy to push air through the air handling system. This means less ductwork modifications
- The OC2 maintains efficiency as they remain outside of the air stream, they also require less maintenance and require less cleaning.
- Tested to EN13725:2003, CE Approved

Spec sheet overleaf >

INNOVATIONS
odour control solutions

Tel: 0845 643 6728
Email: sales@ocinnovations.co.uk
Website: www.ocinnovations.co.uk

INNOVATIONS
odour control solutions

ODOUR CONTROL

OC INNOVATIONS - OC2 (SPECIFICATIONS)

TECHNICAL INFORMATION

Ozone Output:	20g/hr ozone output
Housing dimensions:	290mm W 290mm L 290mm H
Housing material:	Stainless Steel powder coated black
Duct work connection:	100mm circular
Volume flow rate in ductwork:	Up to 2m3/s per unit, subject to cooking odours.
Air residence time inside chamber:	>0.1 seconds
Pressure drop:	N/A
Weight of unit:	10Kg approx.
Electrical requirements:	240V / 1 ph / 50/60Hz
Power requirements:	168W
Safety:	THE UNIT MUST BE INTERLOCKED IN TO FAN CONTROL SYSTEM

INSTALLATION

It is recommended to locate the units with an injection point located closest to the source of odours (i.e. Canopy plenum or nearest accessible point on ductwork, in order to maximize dwell time. In any case the dwell time must be no less than 1 second.

The system is powered via a fused spur/socket, which is interconnected to the main extraction fan control to ensure that the OC2 units only operate when the main fan is operating.

THE UNIT MUST BE INTERLOCKED INTO THE FAN CONTROL SYSTEM

MAINTENANCE

An optional service contract is available which entails a yearly inspection of the unit.
Please contact us for further information and pricing.

INNOVATIONS
odour control solutions

Tel: 0845 643 6728
Email: sales@ocinnovations.co.uk
Website: www.ocinnovations.co.uk

Fläkt Woods Limited

Technical Data Sheet

MaXfan Compac

Quotation Number	:	Project Code	: AG-24464-1
Project Name	:	Customer	:
Item Reference:	:	Date:	: Monday, October 30, 2017

Fan Code	31 MaXfan Compac
Fan Diameter / Size	315 Size / mm
Installation Type / Form of Running	C / AB
Fan Casing	Long
Motor Frame	80 [Class F]
Motor Rating	0.900 kW [IE2]
Full Load Current	3.32 A
Starting Current	18.7 A
Motor Mounting	Pad
Electrical Supply	220-240 Volts 50 Hz 1 Phase
Start Type	DOL
Motor Winding	Standard
Enclosure	Standard All
ErP [FMEG] Rating	N 46 (ErP Compliant 2015)
ErP [FMEG] Target	N 40
FMEG Blade Angle [Range]	15° [15° - 15°]
Measurement Category	C (Static)
VSD	N
Fan + Motor Efficiency	37.6% (0.48 m³/s @ 288 Pa)
Motor Input Power (ErP)	0.369 kW
Air Density	1.2 kg/m³ / 20 °C / 0 m / 40% RH
Smoke Venting	Non Smoke Venting
Product Number	EJ313266
	Speed control by Inverter only

Performance data has been derived from tests carried out in a Flakt Woods laboratory, in accordance with ISO 5801 and is specifically applicable for Ducted installations. When an electronic controller is incorporated, enhanced motor noise can occur - particularly when the operating speed is well below maximum. FWL therefore recommend using an auto transformer speed controller for noise sensitive applications. Bifurcateds are Erp exempt when used continuously at >100C. They are not for use in the EEA at lower temperatures.

The MaXfan Compac includes a preprogrammed inverter drive to operate via 1 phase supply, offering full speed control and optimised performance.

Acoustic data has been derived from tests carried out in a Flakt Woods laboratory, in accordance with BS 848 Pt 2, 1985 / BS EN ISO 5136 under Ducted conditions. The single figure provided is the overall Inlet sound pressure level at the specified distance, under spherical, free field conditions.

Acoustic figures for adjusted running speeds have been interpolated and are for reference only.

Terms and Conditions:This offer is made subject to the terms and conditions detailed on the accompanying letter.

Description	Qty	Nett Unit Price	Price
Fan			
EJ313266 - 31 MaXfan Compac	1	enquire	enquire
Accessories			
PR901092 - Inverter	1	enquire	enquire
Thermistors	1	enquire	enquire
TOTAL PRICE (Fan / Accessories / Controls)			**enquire**

Optional Controllers & Sensors

Optional Accessories


Mounting Feet [AS021102]

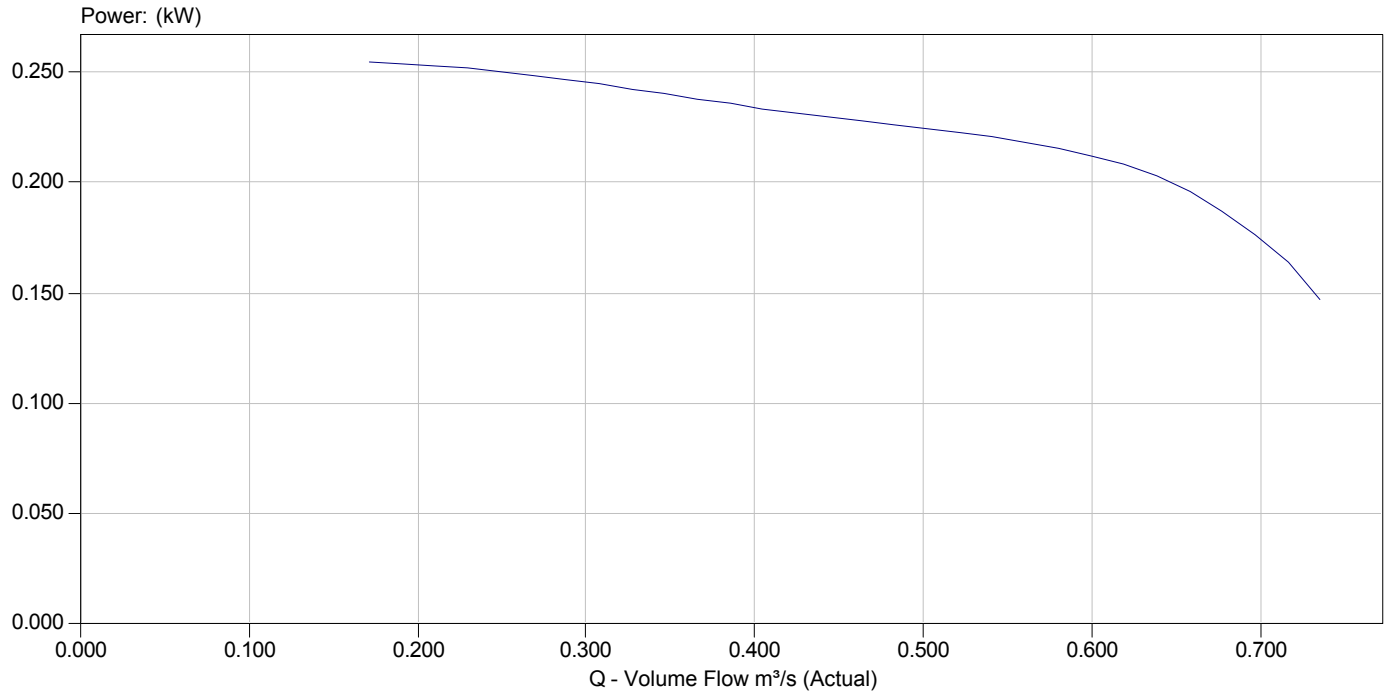

Matching Flange [408238]

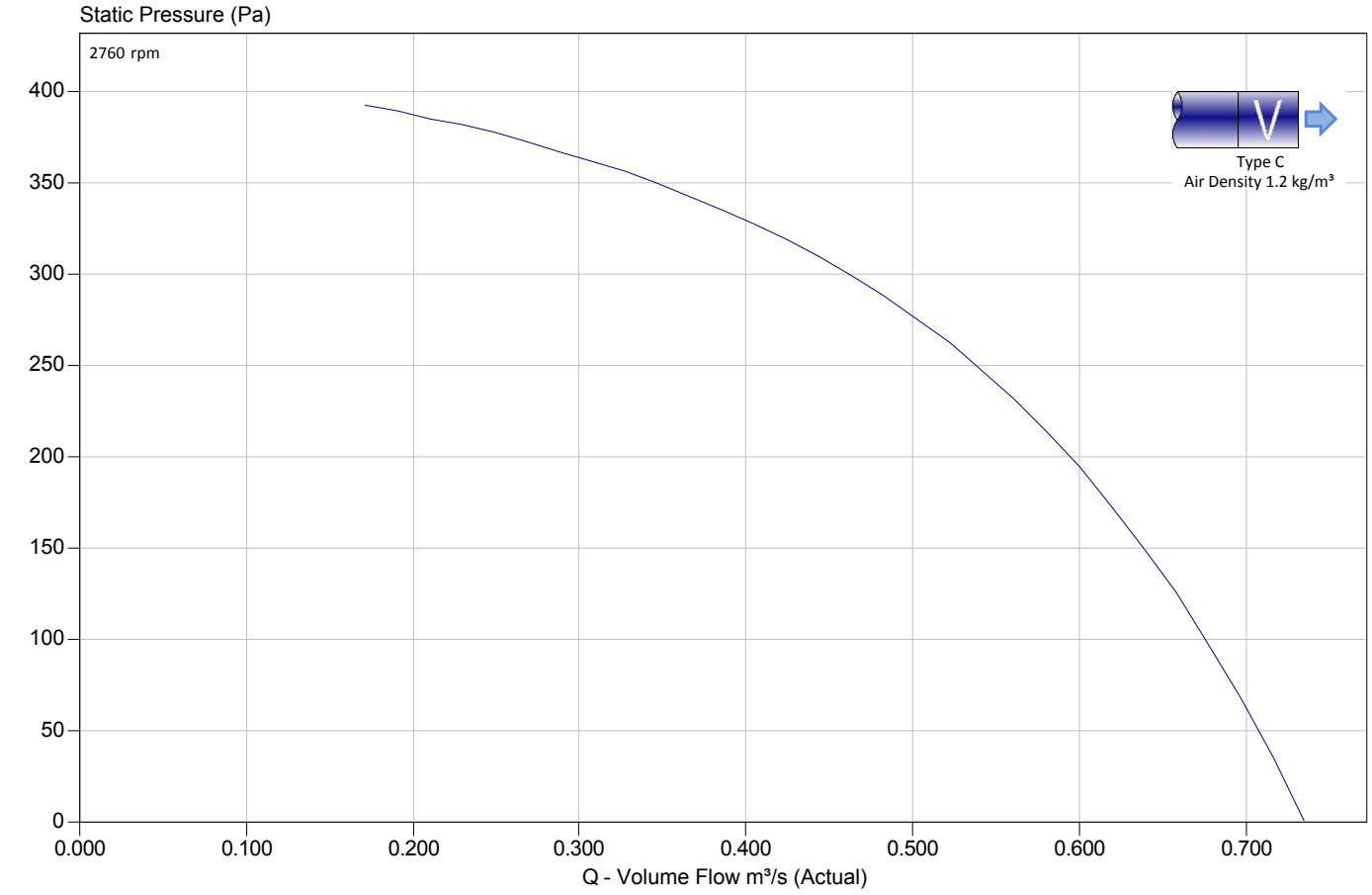

Rubber AV Mounts [505000]


Flexible Connector [414865]

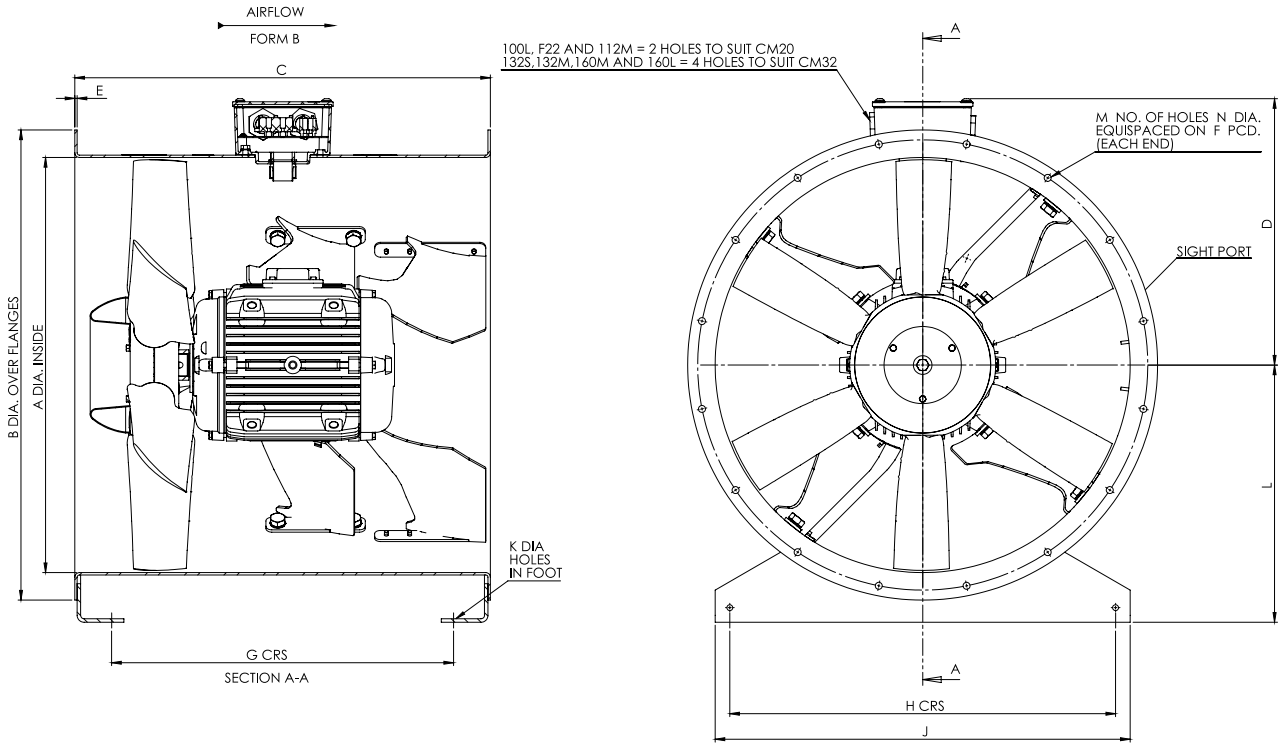
Flaktwoods Colchester
, Essex, CO4 5ZD
Tel: 07801722182 Fax:
Website: www.flaktwoods.co.uk
Email: Adam.Butcher@flaktwoods.com

Quotation Number	:	Project Code	: AG-24464-1
Project Name	:	Customer	:
Item Reference:	:	Date:	: Monday, October 30, 2017
		Fan Code	: 31 MaXfan Compac





Quotation Number	:	Fan Code	: 31 MaXfan Compac
Project Name	:	Customer	:
Item Reference:	:	Date:	: Monday, October 30, 2017



A	315
B	395
C	375
D	229.5
E	3
F	355
G	285
H	265
J	315
K	10
L	200
M	8
N	10
Weight (kg)	33

Notes : Dimensions shown in mm / Weight in kg

Reference :Catalogue drawing

This drawing shows dimensions that should be used as a guide only and are subject to change. Certified drawings are available on request.

Flaktwoods Colchester
, Essex, CO4 5ZD
Tel: 07801722182 Fax:
Website: www.flaktwoods.co.uk
Email: Adam.Butcher@flaktwoods.com

Quotation Number	:	Project Code	: AG-24464-2
Project Name	:	Customer	:
Item Reference:	:	Date:	: Monday, October 30, 2017

Fan Code	35 MaXfan Compac
Fan Diameter / Size	355 Size / mm
Installation Type / Form of Running	D / AB
Fan Casing	Long
Motor Frame	80 [Class F]
Motor Rating	0.900 kW [IE2]
Full Load Current	3.32 A
Starting Current	18.7 A
Motor Mounting	Pad
Electrical Supply	220-240 Volts 50 Hz 1 Phase
Start Type	DOL
Motor Winding	Standard
Enclosure	Standard All
ErP [FMEG] Rating	N 61 (ErP Compliant 2015)
ErP [FMEG] Target	N 58
FMEG Blade Angle [Range]	15° [15° - 15°]
Measurement Category	D (Total)
VSD	N
Fan + Motor Efficiency	53.2% (0.88 m³/s @ 329 Pa)
Motor Input Power (ErP)	0.542 kW
Air Density	1.2 kg/m³ / 20 °C / 0 m / 40% RH
Smoke Venting	Non Smoke Venting
Product Number	EJ353266
	Speed control by Inverter only

Performance data has been derived from tests carried out in a Flakt Woods laboratory, in accordance with ISO 5801 and is specifically applicable for Ducted installations. When an electronic controller is incorporated, enhanced motor noise can occur - particularly when the operating speed is well below maximum. FWL therefore recommend using an auto transformer speed controller for noise sensitive applications. Bifurcateds are Erp exempt when used continuously at >100C. They are not for use in the EEA at lower temperatures.

The MaXfan Compac includes a preprogrammed inverter drive to operate via 1 phase supply, offering full speed control and optimised performance.

Acoustic data has been derived from tests carried out in a Flakt Woods laboratory, in accordance with BS 848 Pt 2, 1985 / BS EN ISO 5136 under Ducted conditions. The single figure provided is the overall Inlet sound pressure level at the specified distance, under spherical, free field conditions.

Acoustic figures for adjusted running speeds have been interpolated and are for reference only.

Terms and Conditions:This offer is made subject to the terms and conditions detailed on the accompanying letter.

Description	Qty	Nett Unit Price	Price
Fan			
EJ353266 - 35 MaXfan Compac	1	enquire	enquire
Accessories			
PR901092 - Inverter	1	enquire	enquire
Thermistors	1	enquire	enquire
TOTAL PRICE (Fan / Accessories / Controls)			**enquire**

Optional Controllers & Sensors

Optional Accessories

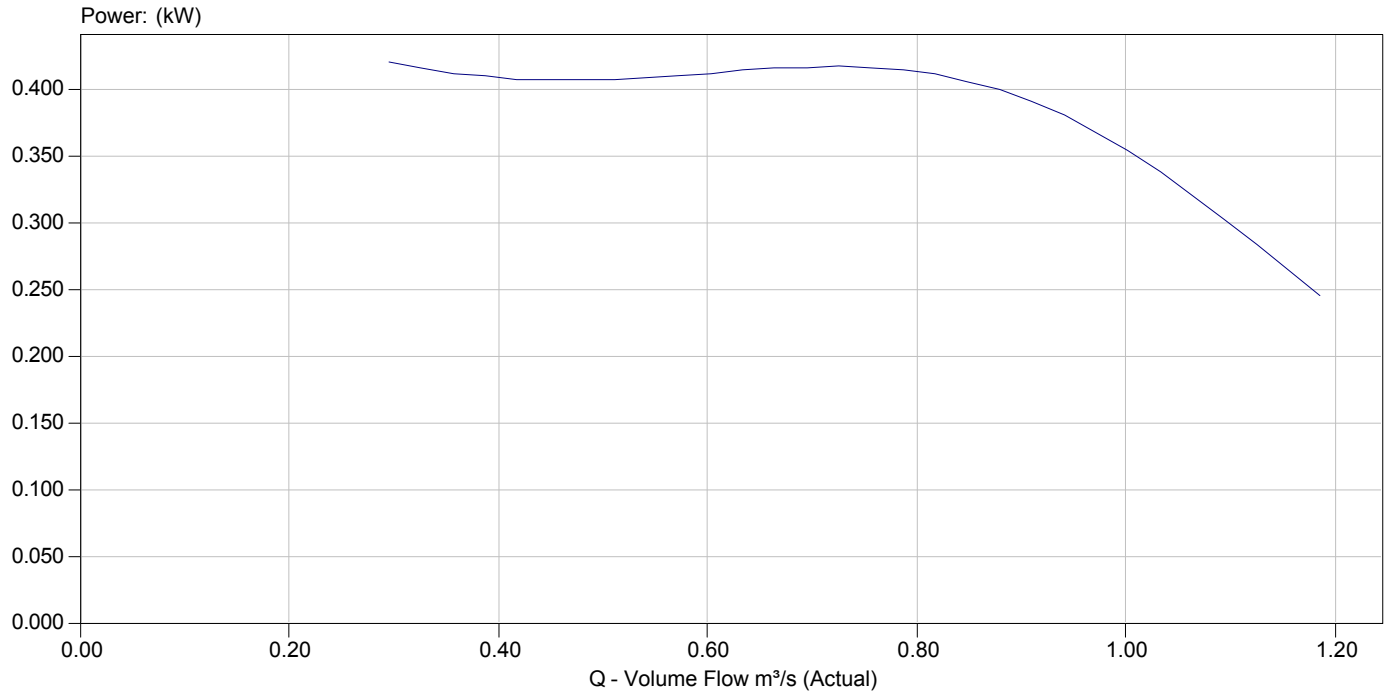

Mounting Feet
[AS021103]

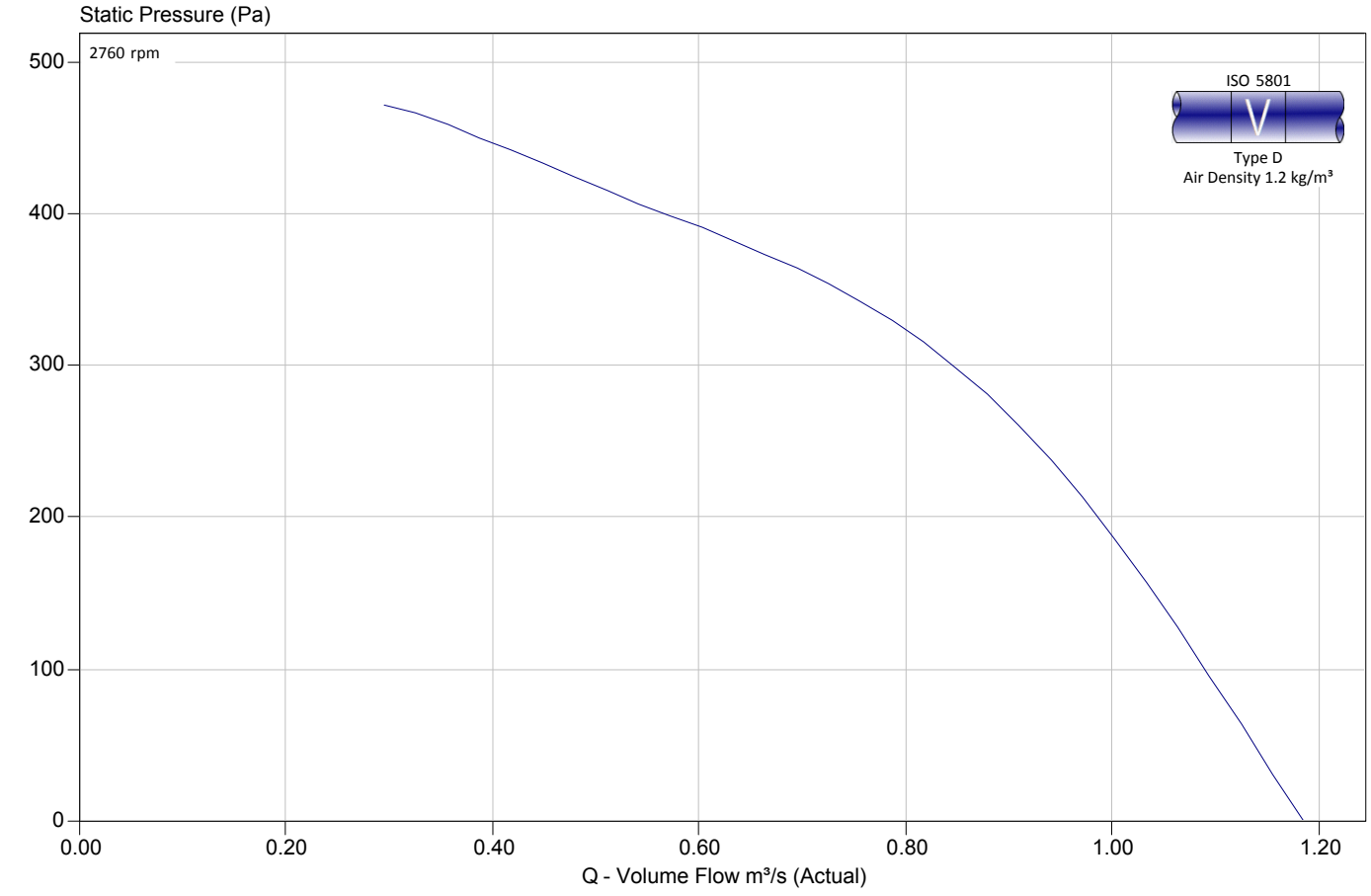

Matching Flange
[501351]


Rubber AV Mounts
[505000]


Flexible Connector
[414866]

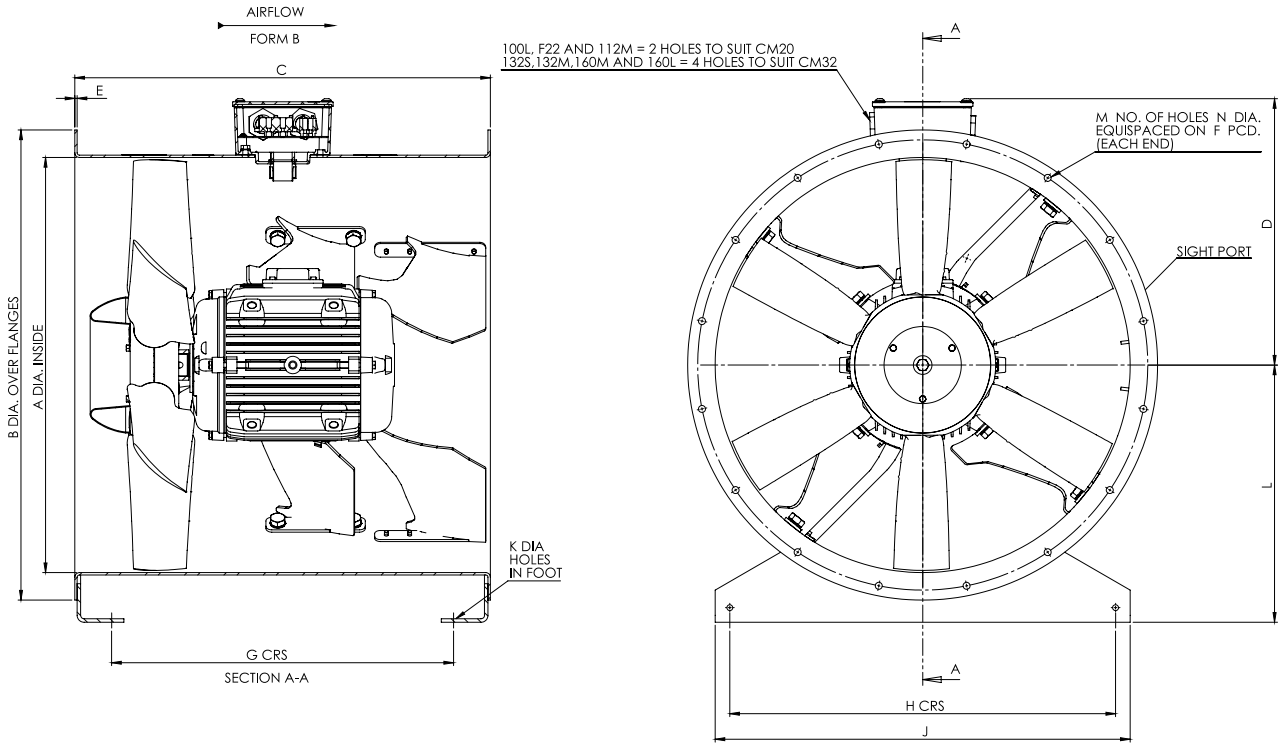
Quotation Number	:	Project Code	: AG-24464-2
Project Name	:	Customer	:
Item Reference:	:	Date:	: Monday, October 30, 2017
		Fan Code	: 35 MaXfan Compac





Flaktwoods Colchester
, Essex, CO4 5ZD
Tel: 07801722182 Fax:
Website: www.flaktwoods.co.uk
Email: Adam.Butcher@flaktwoods.com

Quotation Number	:	Fan Code	:	35 MaXfan Compac
Project Name	:	Customer	:	
Item Reference:	:	Date:	:	Monday, October 30, 2017



A	355
B	435
C	375
D	249.5
E	3
F	395
G	285
H	305
J	355
K	10
L	225
M	8
N	10
Weight (kg)	34

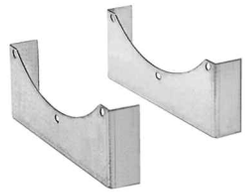
Notes : Dimensions shown in mm / Weight in kg

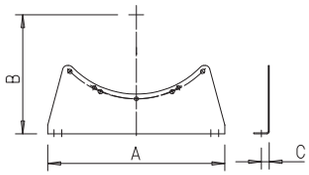
Reference :Catalogue drawing

This drawing shows dimensions that should be used as a guide only and are subject to change. Certified drawings are available on request.

MK

Dimensions in mm





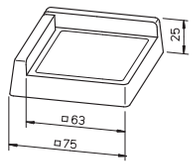
Mounting feet
To fix Axial/VAR cased fans on ceiling, wall or floor. Made from galvanised sheet steel or hot dipped galvanised steel. Fixing holes fit casing flanges.
Set includes a pair of feet, nuts and bolts.

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.

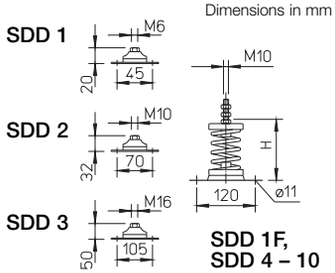
SDD-U Ref. No. 5627

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	●	

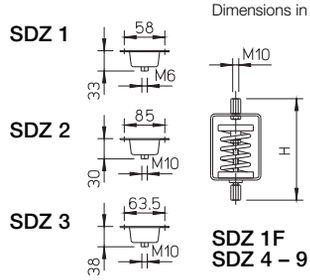
* shown in dimensional drawing

SDZ

Dimensions in mm

SDZ 1 – 3

SDZ 1F, 4 – 9



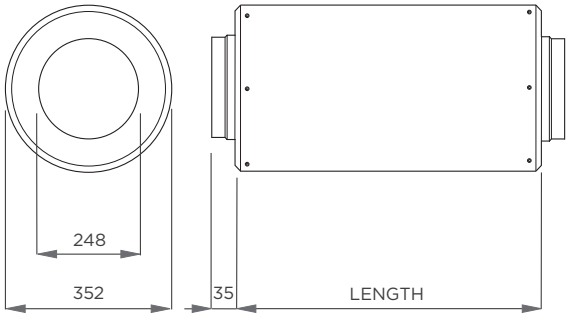
Anti vibration mounts for suspension
To reduce noise and vibration transmission of fans installed hanging from ceilings.
Specification as model SDD.

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

CP01-M25 SILENCER



TYPICAL NOISE REDUCTION (dB) - CENTRE BAND FREQUENCY **DIMENSIONAL DATA**

PRODUCT CODE	63 Hz	125 Hz	250 Hz	500 Hz	1000 Hz	2000 Hz	4000 Hz	8000 Hz	LENGTH	WEIGHT
CP01-M25-030	2	3	6	12	16	19	17	8	300mm	5 Kg
CP01-M25-060	3	6	10	19	25	29	18	10	600mm	9 Kg
CP01-M25-090	5	8	12	24	30	30	22	14	900mm	13 Kg
CP01-M25-120	7	10	15	31	37	38	26	15	1200mm	17 Kg

Typical noise reduction 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.

250 DIA DUCT MOUNTED SILENCER

Available in four standard lengths, M-Series Silencers have excellent attenuation properties, achieved with sound absorbing infill retained in the attenuator casing by a perforated galvanised steel liner.

- Fits directly into 250mm diameter ducting
- Standard lengths 300, 600, 900 & 1200mm
- Use up to 70°C (standard construction)
- Systems up to 1000 Pascals
- Special lengths on request

MATERIAL & FINISH

All casings are manufactured from mill finish hot dip galvanised mild steel conforming to EN10327 (BS2989) including the flow formed one piece end fittings. To prevent erosion of absorbing materials the M Series Silencers are fitted with a perforated liner manufactured from galvanised mild steel conforming to EN10327 (BS2989). The M 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 1000 Pascals positive and negative.
Temperature -12° to +70° 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.

ALTERNATE SPECIFICATION

The above specification refers to our standard stock range. We can also supply custom made M Series Silencers with alternative dimensions, temperature ratings, construction materials and product finishes. Please contact us for further information and advice.

Example part code: CP01-M25-030

CP01 Product Group Code
M25 Diameter Code 25 = 250mm
030 Length Code 030 = 300mm

INSTALLATION

For recommendations for the support of the silencer the principles of Part Six (pages 43-46) of the HVCA DW144 standard should be followed.

It is important that the recommendations in the table are adhered to when locating the silencer in relation to other duct-mounted equipment. If the silencers are to be used in conjunction with equipment not listed please enquire for advice.

EQUIPMENT	LOCATION
Centrifugal Fans	Direct couple only at the same size; use an inlet cone if open after silencer.
Axial Fans	Direct couple only at the same size. Use an inlet cone if open after silencer.
Mixed-Flow Fans	Direct couple only at the same size. Use an inlet cone if open after silencer.
Ductwork Bends	Direct couple only at the same size.
Ductwork Reducers	Direct couple only with reducers of maximum 15° cheek slope.
Finned Coils & Filters	Leave 200mm plenum between silencer and coil or filter, and suitable reducer as specified in HVCA DW/144 1998.

MAINTENANCE

Silencers are of a passive nature and as such require no routine maintenance or lubrication.

INSPECTION

For inspection access the recommendations set out in Heating & Ventilating Contractors Association specification DW144 1998, appendix M – Guidance Notes for Inspection, Servicing and Cleaning Access Openings, should be followed. We would suggest Level 2 one 300mm x 200mm-inspection panel down-stream or Level 3 one 300mm x 200mm inspection door each side of the silencer. Refer to table 25 of DW144 or Section 2 of HVCA specification TR17 for further recommendations.

It is our recommendation that the silencers are inspected periodically to ensure that the airways are free from obstructions and no dust or foreign matter has collected and blocked the holes in the perforated liner elements.

CLEANING

Should the airways 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.

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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