PLANNING AND
BUILDING CONTROL
14 DEC 2011

SUPPORTING INFORMATION

ON THE

PROPOSED EXTRACTION SYSTEM AND PLANT

AT

252, WILMSLOW ROAD FALLOWFIELDS, MANCHESTER. M14 6LD

1.0 PREMISES

Our client, Papa John's (GB) Ltd, operate a national network of 170no (and rising) take-away pizza outlets. The premises which are the subject of this planning application are to be operated as such as store.

Our client's business is restricted to the preparation and cooking of pizza and other sundry foods, such as chicken wings and potato wedges. Of all these products, only the pizzas are prepared on site. The remaining elements come pre-packaged and are stored on site before use before being cooked. All products are designed to be oven-cooked and, consequently, the only cooking equipment employed in a Papa John's outlet is a conveyor oven. The current model being installed in new stores is the gas fired Middleby Marshall PS 740.

As a result of this 'oven only' policy, our client's operation is a low grease and odour operation and the ventilation system we employ is designed accordingly. We have a standard system design with the flexibility to be modified according to the varying requirements of the location of the property, the impact on neighbouring occupiers and any comments we have received in pre-application consultation with the relevant departments of the local authority.

Across the company's portfolio we have installed systems to varying designs, depending on local authority requirements. Consequently, we are confident that our specifications and designs are competent at achieving parameters for noise and odour and confirm the contents of this document are proven as accurate in both their design and resultant on-site performance.

2.0 PLANS AND DRAWINGS

In order to assist with your understanding of the relationship between the property and the ventilation system, we refer you to the drawings of the property which form part of the application to which this document is attached. In addition, we draw your attention to the schematic drawing no. PJES/04 Rev B - Ventilation Scheme D of the ventilation system in Appendix A. The plans and elevations in the planning application show the positions and layout of equipment as it is proposed to be installed while the schematic drawing of the ventilation system assists your understanding of the system's make up.

3.0 SYSTEM OPERATION

The system is designed to performance criteria set out by the manufacturer of the ovens, Middleby Marshall.

The extract airflow design criteria at the canopy is 2310cfm or 65m^3/m. This is achieved by selection of an in-line fan with the appropriate duty to meet these criteria on a site specific basis. In order to balance environmental conditions in the kitchen, make-up (also referred to as "supply") air is provided to supply the ovens with combustion air and ventilate the demise while the ovens and extract fans are running. The fresh air is fed from outside and is distributed around the oven by 4no ceiling mounted air supply grilles. Dependant on site specific circumstances and conditions, this supply of make-up air can either be a passive or mechanically supplied system.

4.0 EXTRACT HOOD

The extract hood is a stainless steel (grade 304) island canopy with integral stainless steel grease baffle filters.

The dimensions of the hood are dictated by the size of the oven and, in the instance of the PS740, will be a maximum 2.4m x 2m. The size of hood allows for a 300mm overhang to all sides of the oven unit in order to comply with current gas safety regulations.

5.0 EXTRACT DUCTWORK AND GRILLS

In this particular scheme, the external ductwork in the application is intended to be routed through the first floor of the property and exiting through the pitched roof expelling at ridge level..

The make-up air is to be taken from the existing louvre grills located on the side elevation..

6.0 FILTRATION AND ODOUR ABATEMENT

As mentioned above, the extract hood is fitted with grease baffle filters which are manufactured in stainless steel and are fully washable. We refer you to our previous comments that our client's operation is low grease in comparison to a restaurant which uses frying processes to prepare food. These filters cope satisfactorily with our operation and are washed regularly to maintain their effectiveness.

We propose the installation of an in-line 'active' carbon filtration system. For your information, the product sheet for the proposed carbon filter is attached in Appendix B. The specified unit is manufactured by Ace Filtration Ltd but our contractors are permitted to use equal approved unit by alternative manufacturers. The filtration system comprises a primary (or pre) filter and the main (or secondary) filter. Such filtration measures, when combined with high level discharge, are sufficient for effective odour dispersal.

7.0 FANS

The fans install in the installation are selected by our contractors as they are responsible for extraction design. In most situations, they are Vent Axia but the contractor is permitted to install equal approved units from alternative manufacturers. When installed, all plant is mounted on anti-vibration mountings in order to isolate them from the structure and double flange flexible connectors between the flue and equipment to minimise vibration.

Our installations are designed to include silencers compatible with the fans which reduce the noise break-out. Product information for the proposed fans and silencers is included in Appendix C.

This airflow criteria results in a minimum efflux velocity of 10 meters per second (m/s).

8.0 CONDENSING UNIT

A condensing unit is required to operate the internal cold store at the premises. Papa John's use Glendon for their cold store installations, including the operating plant. The unit specified for installation at this store is Karbox 2464 and the product information is included in Appendix D of this pack.

When installed, the condenser plant is fixed internally on wall mounting brackets.

9.0 MAINTENANCE

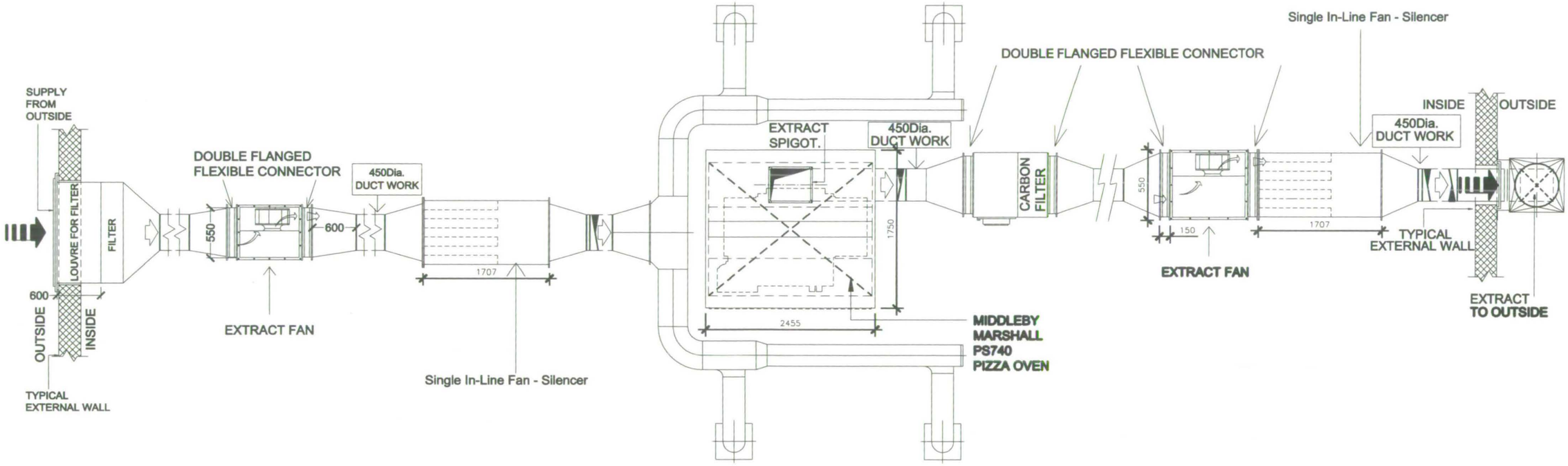
Each completed Papa John's store is provided with a Health and Safety File which is kept on site by the operator. The file, amongst other things, provides details on the operation and maintenance of the ventilation equipment. To summarise, the maintenance requirements are summarise as follows:

- The grease baffle filters are removable and washable. This can be done at any given time by the operator. The minimum recommended cleaning interval is once a week.
- The carbon filters are changed as per the manufacturer's recommendation and no less than once a year.
- The fans are to be serviced annually as recommended by the manufacturers.

APPENDIX A - DRAWINGS

Do not scale from this drawing. All contractors must visit the site and be responsible for taking and checking their own dimensions relating to this work. The Copyright of this drawing is retained by SUMMERHILL GREEN and must not be reproduced without prior written permission

SCHEME D REVISION B
Extract & Supply System (No Noise Or Odour)



NOTES:

All Schemes With 3KW Entrance Door Heater. To Papa Johns Specification.

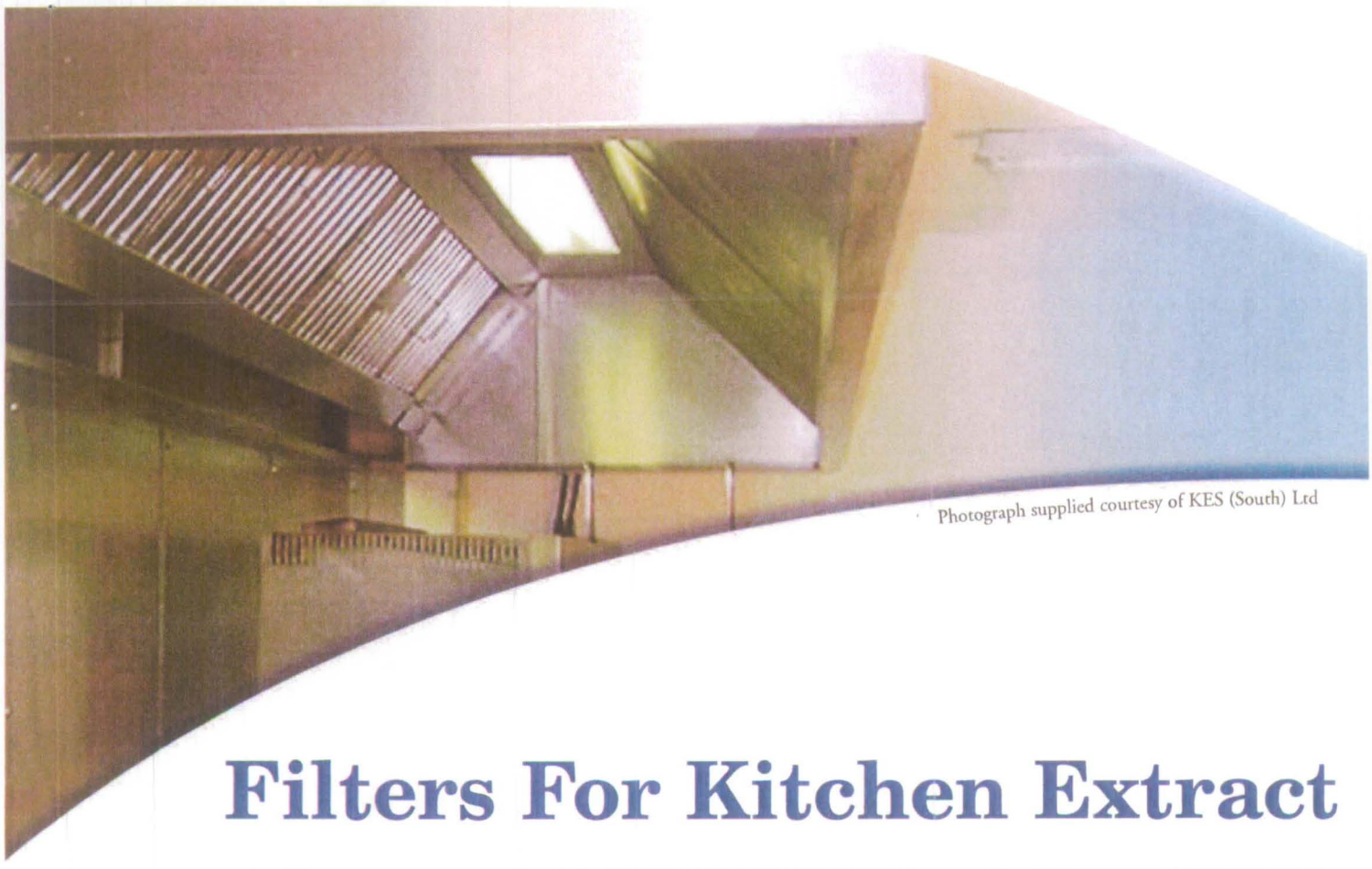
The Equipment Specified Is Recommended But Alternative Manufacturers Can Be Used.

The Selection Of The Fan Will Depend On Each Site. (i.e. Length Of Duct Runs Etc)

All Supply And Extract Fans To Be Fitted On Anti-Vibration Mountings.

PIZZA PAPA JOHNS	PROJECT	ADDRESS	CLIENT	COMPANY	LIST OF REVISIONS				DRAWING TITLE	DRAWN BY	SCALE	
					REVISION	DATE	DESCRIPTION	REVISED BY		JE		NTS
	PAPA JOHNS MECHANICAL EXTRACTION	VARIOUS SITES	FRANCHISE TO BE ADVISED	PERFECT PIZZA LIMITED	A	28-07-09	DUCTWORK AND FAN SIZES REVISED	MAS	SCHEME D	DATE 11/01/2005	DWG NO	PJES/04 Rev B
					B	25-10-10	DRAWING REVISED	MAS		FILE MS/0100		

APPENDIX B – FILTER MEDIA



Photograph supplied courtesy of KES (South) Ltd

Filters For Kitchen Extract



Veevent Baffle Grease Filter

Baffle filters work very differently to the mesh style filters; rather than collecting the grease within the filter medium, the filters work by forcing the grease laden air to change direction and velocity as it passes through the filter. Because the grease droplets are unable to change direction as quickly, they become separated from the air and are deposited on the baffle blades and drained into drip trays. This method of grease filtration removes any potential risk of spread of fire, should a fire occur on the cooking surface below. Without a grease build up in the filter, there is no increase in the operating resistance allowing a constant airflow to be maintained, reducing energy consumption. The Veevent is manufactured in stainless steel and, unlike other baffle filters on the market, has aerodynamically profiled baffle blades. This ensures maximum airflow and grease retention whilst creating minimum pressure loss. Handles are fitted as standard to the shortest side, with drain holes in top and bottom leading edge, the filters can be fitted either way up. Five standard sizes are available from stock for next day delivery.

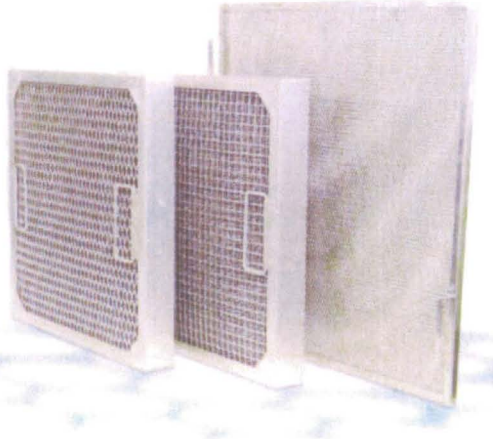
Data Sheet AF111

Mesh Type Grease Filter (Type AGMB)

These filters are used on those kitchen extract systems where functionality and economics are Paramount and where the grease load is relatively low. Grease is collected in the wire mesh media and with regular cleaning – at least once a week – will last many years. The filter consists of a rigid aluminium frame, with a knitted wire mesh filter pad, which is graded for maximum grease retention, and weld mesh facings to both sides. Handles are fitted as standard to the shortest dimension. These filters can be manufactured to any required size but the most popular sizes are always available from stock for next day delivery.

Available Options: For kitchen extract installations which require an aesthetically pleasing appearance or where the filters are visible to customers, we recommend the Type AGM. Constructed in a similar way to the AGMB, the filter has expanded aluminium facings.

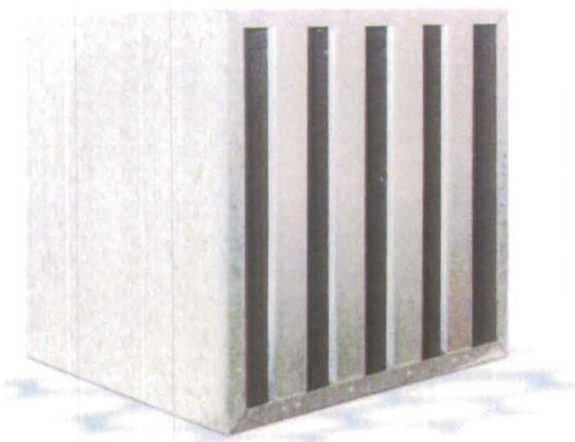
Data Sheet AF112



Please Note: These filters are not suitable for cleaning with caustic soda. We are pleased to offer our Grease Filter Cleaning Crystals which, when dissolved in water, will remove deposited grease without damaging the filter. Crystals are available in 10Kg tubs which will make approximately 425 litres of cleaning solution. The cleaning solution is alkaline and appropriate care must be taken when handling. A full set of instructions are issued with the crystals.

Carbon Filters for Odour Removal

Activated carbon has for many years been used to reduce airborne odours and contaminants. Its use has expanded considerably improving conditions in line with environmental awareness. Carbon is commonly used to control extract emissions from kitchens, factories and chemical processes, but is equally effective on supply air odours, improving the air quality for the occupants of buildings located in the vicinity of airports, car parks, sewerage works and rubbish tips.

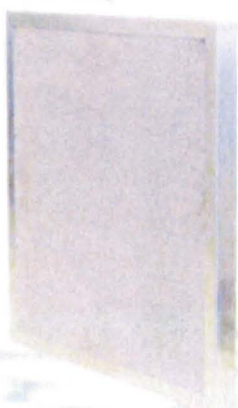


ACE Type ACD

ACE Type ACD carbon units are completely disposable, self contained units. They comprise of chemically bonded carbon panels assembled in a "V" formation and permanently sealed within a galvanised steel casing. Grade 207C carbon is used as standard, but special carbon can be provided to suit specific requirements. The filters can be manufactured to any reasonable size to suit existing ductwork or air handling units. Sizes and carbon weights can also be adjusted to suit existing installations or other units on the market. All ACD units are delivered sealed in polythene to prevent the carbon absorbing contaminants from the atmosphere.

Activated Carbon Panels

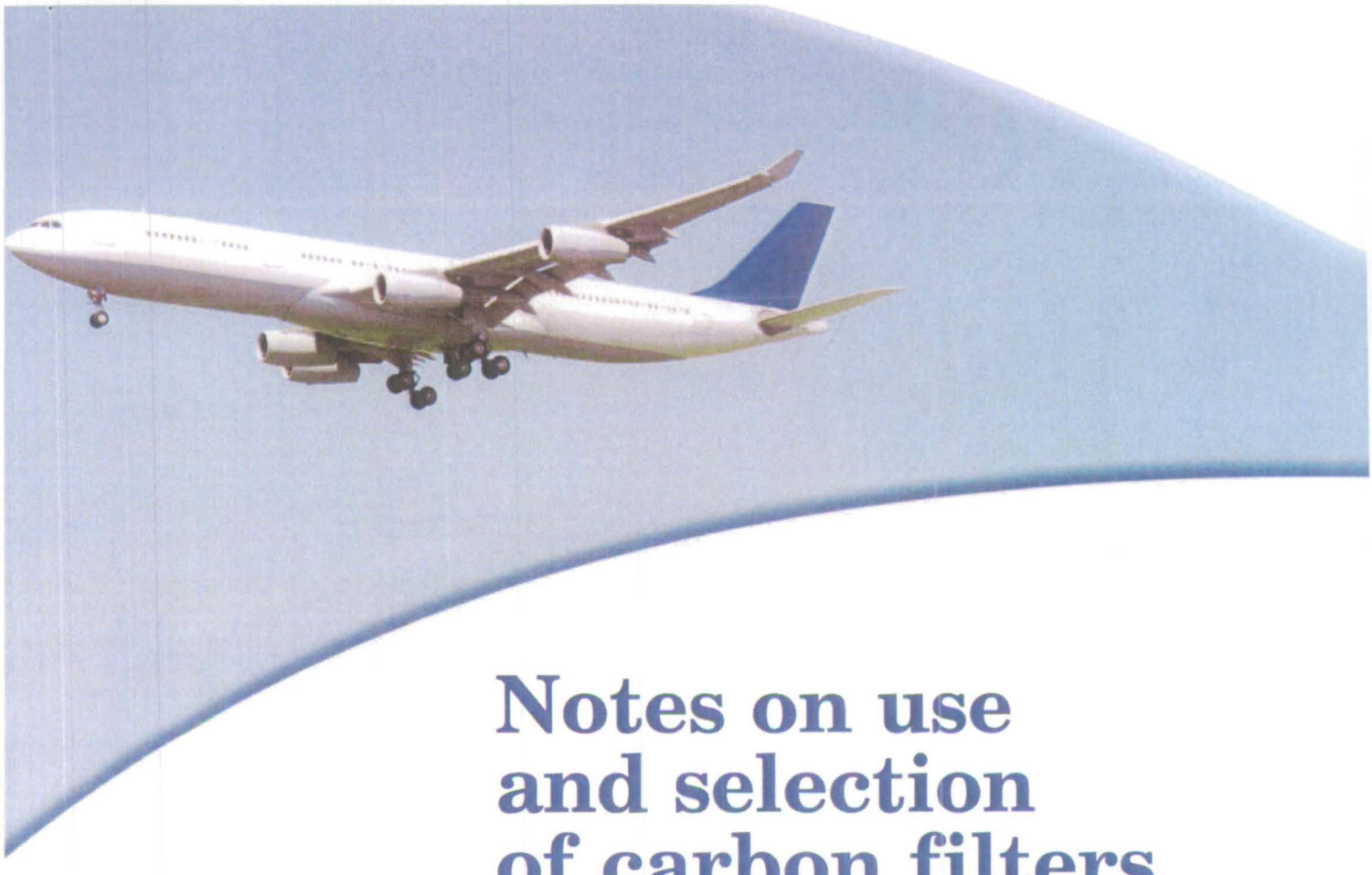
There are many applications for carbon filters where the air volume is such that a single carbon panel will be effective. Carbon panels are manufactured using grade 207C carbon granules which are chemically bonded to form a uniform panel. The panels have a cloth covering which makes them clean to handle and the uniform panel structure ensures an even air resistance across the face. One advantage of this construction when compared to "loose fill" panels, is that there is no possibility of settlement of the carbon which can create air bypass. The panels are usually fitted with an aluminium frame.



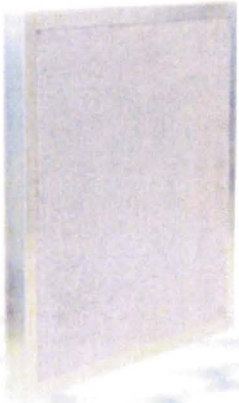
Please Note: Because the absorption capacity of activated carbon is dependant on a variety of operating conditions, we recommend that you discuss your requirements with our Sales Office who will be delighted to answer your questions and advise you on the use of carbon filters.

E sales@acefiltration.co.uk

W www.acefiltration.co.uk



Notes on use and selection of carbon filters



1 As a guide a 25mm nominal thickness carbon panel should be selected to have a face velocity not exceeding 0.2 m/s if it is to achieve a contact (or dwell) time of approximately 0.1 seconds. This equates to a 600 x 600 x 25mm nominal carbon panel being able to handle about 0.075 m^3/s at 0.1 second contact time.

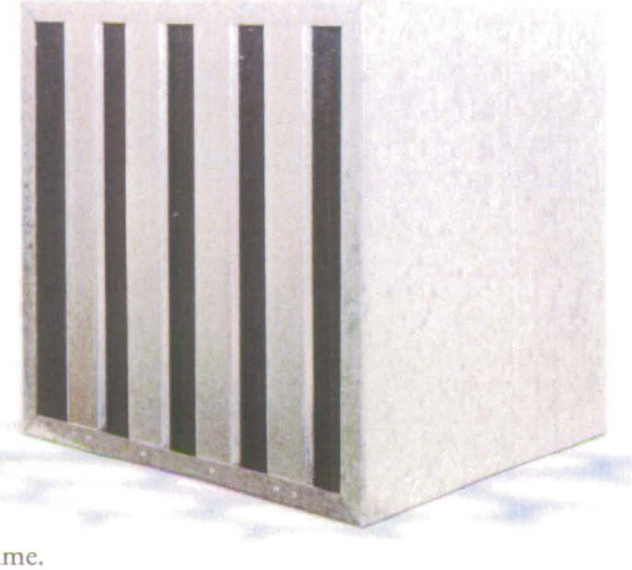
2 Where hot air is being filtered, for example extract from a cooker hood, the carbon filters should be positioned as far from the heat source as possible. Air stream temperatures in excess of 40°C should be avoided. If higher temperatures are anticipated, it may be necessary to reduce the air temperature by means of a fresh air bleed, or provision of a cooling coil.

3 Humidity should be kept below 80% RH to prevent condensation occurring within the carbon. If this figure is exceeded and condensation takes place, a dramatic increase in resistance will occur.

4 Pre-filters must be fitted in the system to prevent contamination of the carbon panel with particulates. This is in addition to the grease filters fitted on the cooking extract. Pre-filtration would normally be provided by a G4 bag as a minimum – Ace Filtration Type AB20. If space is limited, then use of a pre-filter panel type ASPC is recommended.

5 Some applications may require a much higher grade of pre-filter. Some cooking operations produce large amounts of smoke, which is detrimental if allowed to reach the carbon filters. In this situation a HEPA or electrostatic filter will be required in addition to the pre-filters mentioned above.

ACE FILTRATION



APPLICATION	AIR VOLUME
Canteens, normal kitchens & restaurants	As rated volume.
Kitchens producing large amounts of fried foods or concentrated cooking of burgers	Base on 50% of rated volume.
Indian or specialist restaurants (Curry, spices etc)	Base on 33% (or in extreme cases 25% of rated volume).
Excess of onions or garlic	Base on 33% (or in extreme cases 25% of rated volume).
General air conditioning	As rated volume.
Specialised applications (Chemicals etc)	Refer to Ace Filtration. Obtain Concentrations and chemical formulae where possible.
Airports (kerosene/petrol fumes)	Base on 66% of rated volume.
Museums, art galleries	Refer to Ace Filtration Special carbon may be required.

E sales@acefiltration.co.uk W www.acefiltration.co.uk

60mm Weather Louvres

Description

For intake or extract air, the 45° blades are fixed at 60mm centres and have excellent integral rain defence features. Suitable for external mounting and is economically priced.

Construction

From extruded aluminium sections, frame and blades 1.6mm thick. Hairline mitres mechanically held, fitted as standard with rear galvanised steel bird mesh screen.

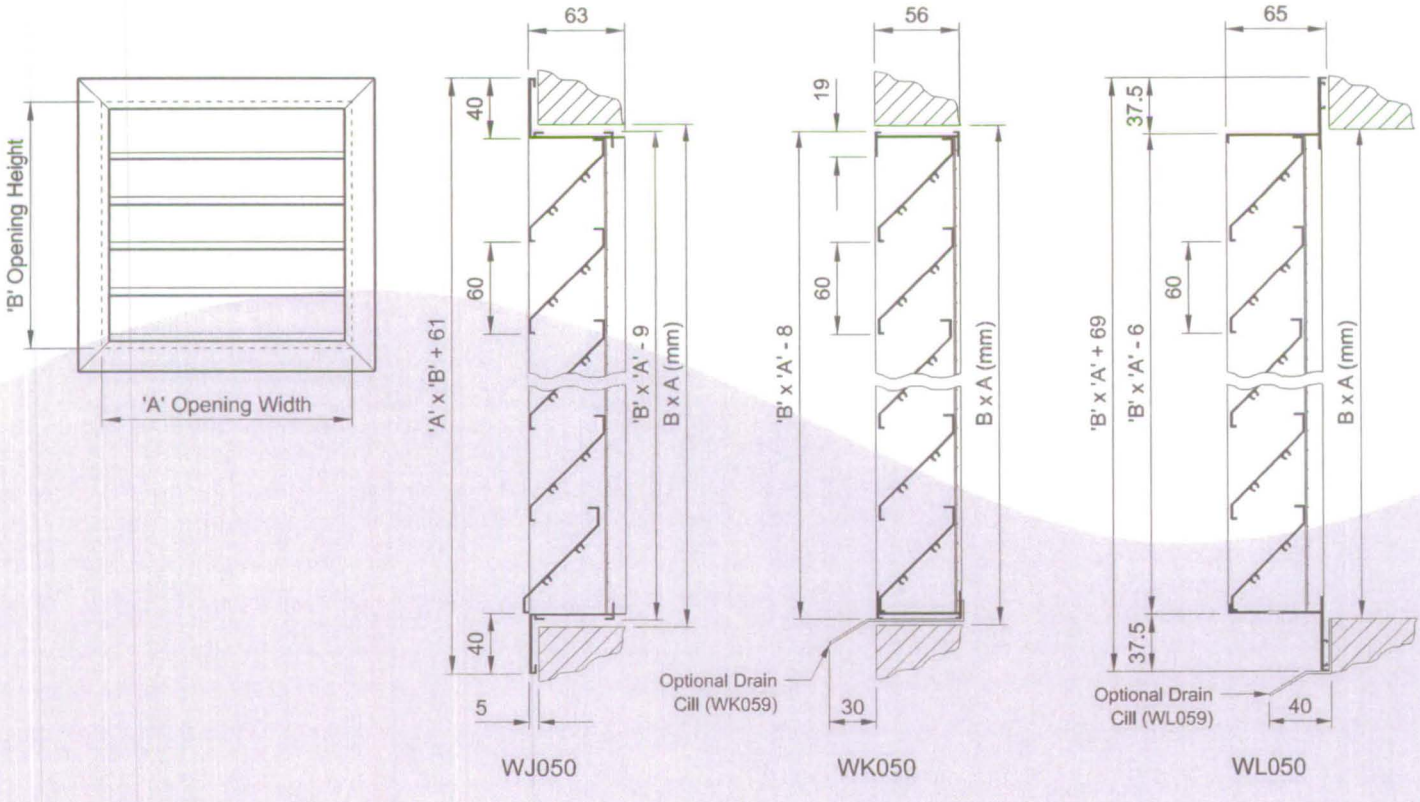
Size and Weight

From 300 x 300 up to 2500 x 1800. Concealed rear mullions when width exceeds 1200mm.
Weight approximately 12kg/m².
Free area 48%.

Product Specification

State Quantity, the product coding and the size Width x Height e.g. **10 Qty.WJ050+0C 1500 x 1000.**





Frame Style	Panel Options	Mesh Options	Accessories
WJ 40mm Flange	0 Single Panel	5 Bird Mesh	0 None
WK Recessed Frame		7 Insect Mesh	9 Drain Cill
WL Reversed Angle Frame		0 None	

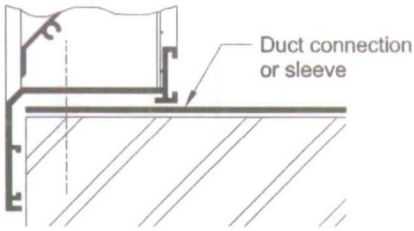
+

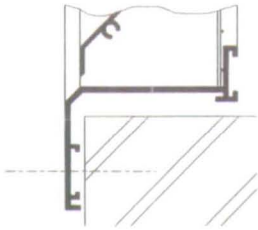
Fixings	Finish
0 None	D Mill Finish
1 Flange Holes	C PPC BS / RAL Colour
4 Rear Fixing Lugs	

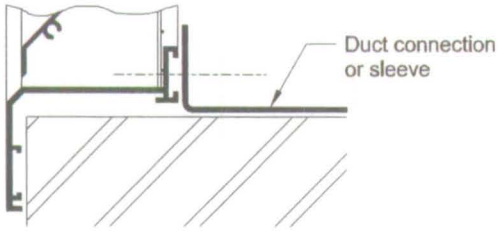
GDL Air Systems Ltd, Woolley Bridge Road, Hadfield, Derbyshire SK13 1AB. Tel: 01457 861538 Fax: 01457 866010 Email: sales@grille.co.uk

Weather Louvre Fixing Options

+ 0 None



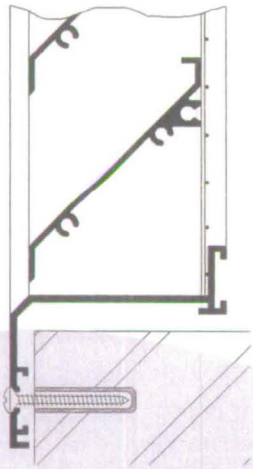




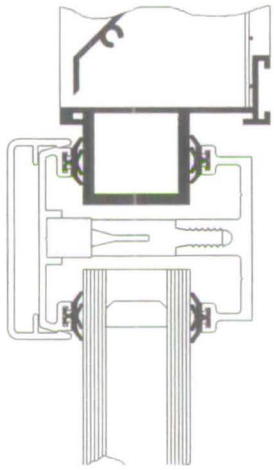
Fixings by installers via positions indicated in situ. From the face of the louvre it is possible to fix between the louvre blades via the side frames.
Use code +0 as the 6th digit of the product coding.
Final sealing by installers.

+ 1 Flange Holes

Pre-punched or drilled flange holes to take No.8 self-tapping screws.
Hole position at the discretion of the factory, unless stated otherwise.

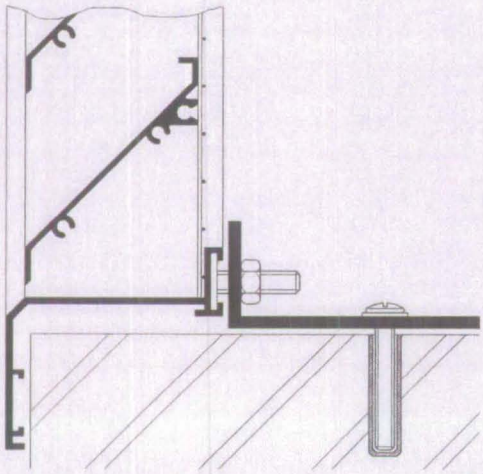


+ G Glazing Bar



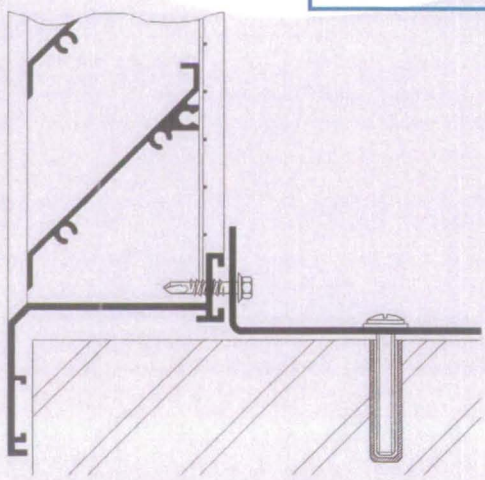
25mm or 28mm glazing bar welded around the perimeter of louvre frame.
Suitable for double glazing frame applications.
Available on louvre types 'W4' and 'W6'.
Specify the overall glass size which the louvre is to replace and glass thickness (25mm or 28mm)

+ 2 Rear Fixing Lugs C/W Tee Bolts



Fixing style '+2' is intended for the larger sized louvre panel with either flanged framing or recess style frame. Specially formed 'Tee bolts' traverse within the track at the rear of frame. Bolts and brackets supplied but quantity at the factory's discretion.

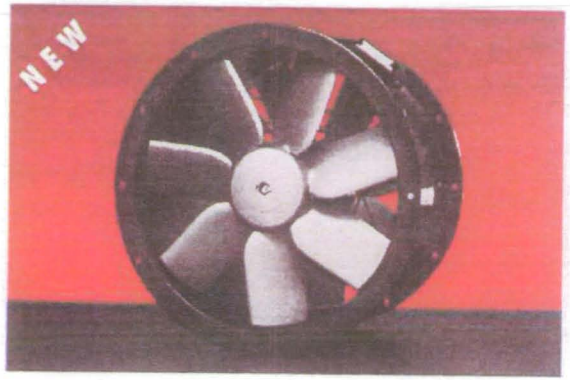
+ 4 Rear Fixing Lugs



Fixing style '+4' is ideal for small to medium sized louvre panels. Brackets are of 1.6mm galvanised sheet steel folded but undrilled. Screws and bolts supplied by others. Brackets should be affixed direct to rear of louvre frame by self-tapping screws. The quantity of brackets is at the factory's discretion (minimum 4 No.)

APPENDIX C – FAN SPECIFICATION SHEETS

VENT-AXIA
TURBOPROP - HIGH PRESSURE AXIAL FANS (TP)



- Contra Rotating, die cast aluminium impellers.
- Compact in size, equivalent to standard long case axial fans.
- Available from 450 to 630 diameter, 1 or 3 phase.
- Speed controllable.
- All units fully protected to **IP65**, ideally suited for internal or external installations.
- Motor insulation Class F, suitable for operating temperatures from -40°C to +70°C.
- Motors protected with Standard Thermal Overload Protection.
- Manufacture controlled to **BS EN ISO 9001.**
- Performance tested to **BS 848** Parts 1 & 2.

TURBOPROP

More efficient kitchen filtration systems and ever larger duct runs have created a need for a new generation of competitively priced high pressure axial fans, suitable for higher working temperatures.

The range offers a new alternative to the H & V industry.

The all-new Vent-Axia TurboProp is a revolutionary design contra rotating case axial. Equivalent in length and up to 2 times the pressure characteristics of traditional long case axial fans.

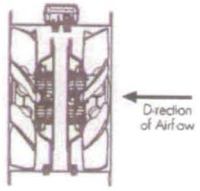
Available in four sizes: 450, 500, 560 and 630mm diameter with a performance from 0.688m³/s to 4.346m³/s (2,476m³/h to 15,645m³/h) and pressure development up to 800Pa.

Ensuring a compact design, the units have been constructed from a single sheet of steel, with both motors and axial impellers mounted within the length of the unit casing. The motor mounting supports are manufactured from steel rod, electro welded and epoxy paint finished, factory assembled to **BS EN ISO 9001** ensuring a quiet and vibration free unit.

All sizes are protected with a tough black epoxy paint finish for those harsh environmental conditions, internally or externally. Ensuring ease of installation both motors are wired directly into a single **IP65** terminal box.

IMPELLERS

The contra rotating impellers are manufactured in die-cast aluminium and are fitted with narrow profiled blades, which provide the maximum efficiency at the maximum airflow.



AXIAL MOTORS

Specifically designed and styled for this range of fans. Ball bearings are greased for life and allow the fans to be installed at any angle. Rotors are dynamically balanced to **ISO 1940. Motors are protected to IP65 against dust and water jets complying with BS EN 60529.** They have ribbed aluminium body castings for efficient cooling. **Motor insulation is Class 'F' (from -40°C to +70°C).**

Sizes 450 and 500 are suitable for speed control by either electronic or voltage reduction controllers. All 3-Phase models are suitable for speed control by frequency inverter.

ELECTRICAL

Single phase 220-240V/50 Hz. Capacitor start and run. Three phase 380V-415V/50Hz. All motors are fitted with **Standard Thermal Overload Protection (S.T.O.P)**, which should be wired into all controller circuits and into starter contactors

TERMINAL BOX

IP65 terminal box is supplied with all models with 20mm and PGII entry.

PERFORMANCE

The fan performance is in accordance with tests to **BS 848** Part 1 1980.

SOUND LEVELS

Fan sound levels, measured in a reverberant chamber in accordance with **BS848** Part 2. Published dB(A) figures are free field sound pressure levels at 3m with spherical propagation at a reference level of 2 x 10^{-5}Pa (20 micro-Pascal). The sound power level spectra figures are dB with a reference level of 10^{-12} Watts (1 pico-watt). To ensure minimum noise levels during speed control, an auto transformer speed control is recommended.

ACCESSORIES

Electronic Speed Controllers

Auto Transformer Speed Controllers

Inverter Speed Controllers

Ancillary Packs

Case Attenuators

Mounting Feet

Wire Inlet Guard

Coupling Flanges

Vent-Axia

Vent-Axia

TURBOPROP FANS PERFORMANCE GUIDE

1 PHASE 4 POLE — m³/s at Pa

Unit Code	Nom. RPM	Phase	0	50	100	150	200	300	400	500	600	700	800	Motor kW	SC Amps	FLC Amps
TP450-14	1370	1	2.039	1.980	1.941	1.874	1.805	1.431	1.192					1.24	32.60	5.40
TP500-14	1160	1	2.300	2.200	2.100	1.980	1.870	1.390	0.700					1.40	26.00	7.30
TP560-14	1340	1	3.852	3.765	3.668	3.571	3.454	3.193	2.892	2.562				3.25	56.00	15.50
TP630-14	1280	1	4.749	4.629	4.498	4.356	4.192	3.799	3.297	2.664	1.790			3.90	76.00	19.00

3 PHASE, 4 POLE

TP450-34	1400	3	1.841	1.794	1.739	1.688	1.628	1.475	1.202					1.25	20.40	3.40
TP500-34	1340	3	2.500	2.460	2.387	2.314	2.235	2.046	1.809					1.75	21.60	3.60
TP560-34	1360	3	3.808	3.735	3.638	3.541	3.444	3.202	2.943	2.668				3.12	34.80	5.80
TP630 34	1370	3	4.897	4.800	4.702	4.580	4.483	4.239	3.971	3.679	3.333	2.339	1.666	4.20	48.00	8.00

S.C. = STARTING CURRENT
F.L.C. = FULL LOAD CURRENT

SOUND DATA

Sound Power Level Spectra dB (re 10^{-12}Watts)

Unit Code		MID OCTAVE BANDS 63	125	250	500	1k	2k	4k	8k	dBA @ 3m
TP450	Inlet	72	89	93	84	83	77	70	64	68
	Outlet	79	89	93	87	86	80	73	67	70
TP500	Inlet	78	92	93	88	88	79	72	66	71
	Outlet	88	91	95	90	88	82	75	70	72
TP560	Inlet	83	95	92	89	89	83	77	73	72
	Outlet	96	98	93	91	92	86	80	75	75
TP630	Inlet	81	101	94	91	91	85	79	74	74
	Outlet	97	102	95	94	94	88	82	77	77

Published dB(A) figures are free field sound levels at 3m with spherical propagation at a reference level of 2 x 10^{-5} Pa. The free field sound power level spectra figure are dB with reference of 10^{-12} Watts. To ensure minimum noise levels during speed control an **auto transformer or inverter speed controller** is recommended.

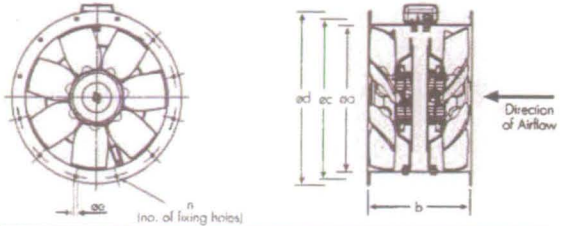
Attenuator Insertion Losses

Dia	63	125	250	500	1k	2k	4k	8k
450	2	4	6	14	17	12	10	6
500	3	4	7	14	17	14	11	7
560	3	4	8	15	18	14	11	7
630	3	4	8	16	18	14	11	7

Attenuator Fitted with Pod Insertion Losses

Dia	63	125	250	500	1k	2k	4k	8k
450	4	8	14	20	28	26	23	19
500	4	8	14	20	29	26	23	19
560	4	9	14	20	29	26	23	19
630	4	9	14	20	29	26	23	19

DIMENSIONS (mm)



Size	Øa	b	Øc	Ød	Øe	n	kg approx
450	450	375	500	537	12	8	36
500	500	375	560	595	12	12	38
560	560	520	620	655	12	12	56
630	630	520	690	725	12	12	63

VENT-AXIA
TURBOPROP FANS
ACCESSORIES









Stock Ref. No.	Electronic Controller Stock Ref. No.	Auto Transformer Stock Ref. No.	Inverter Kit 3ph in/out Stock Ref. No.	D.O.L. Starter Stock Ref. No.	Ancillary* Pack Stock Ref. No.	Mounting Feet (pair) Stock Ref. No.	Coupling Flange Stock Ref. No.
TP450-14	103 03 110A	103 14 107	–	103 11 240 + 103 12 070	105 13 450	105 03 450	105 06 450
TP450-34	–	103 14 304	103 20 302 04	103 11 415 + 103 12 040			
TP500-14	103 03 110A	103 14 113	–	103 11 240 + 103 12 105	105 13 500	105 03 500	105 06 500
TP500-34	–	103 14 304	103 20 303 01	103 11 415 + 103 12 040			
TP560-14	–	–	–	103 11 240 + 103 12 039	105 13 560	105 03 560	105 06 560
TP560-34	–	–	103 20 305 04	103 11 415 + 103 12 070			
TP630-14	–	–	–	103 11 240 + 103 12 039	105 13 630	105 03 630	105 06 630
TP630-34	–	–	103 20 350 02	103 11 415 + 103 12 105			

* Ancillary Packs consist of:
4 Anti-Vibration Mounts
2 Matching Flanges
2 Mounting Feet
2 Flexible Connections

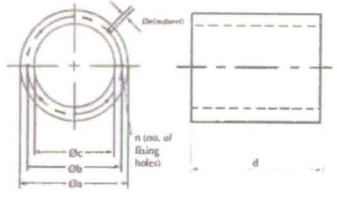





Stock Ref. No	Inlet Wire Guard Stock Ref. No.	Case Axial Attenuator Stock Ref. No.	Case Axial Attenuator incl. Pod Stock Ref. No.	Anti-Vibration Mounts Stock Ref. No.
TP450-14 TP450-34	105 05 450	105 14 450	105 00 450	105 23 033
TP500-14 TP500-34	105 05 500	105 14 500	105 00 500	105 23 033
TP560-14 TP560-34	105 05 560	105 14 560	105 00 560	105 23 033
TP630-14 TP630-34	105 05 630	105 14 630	105 00 630	105 23 033

Guards: Some installations may occur where additional safety parts are needed, to ensure safety in operation. For example, the unit may be fitted at the inlet or outlet end of a ducted ventilation system, thereby exposing the impeller/motor to unguarded access. In this event, the installer must fit a safety guard complying to current regulations. These guards are available as an optional extra.

ACCESSORIES DIMENSIONS (mm)

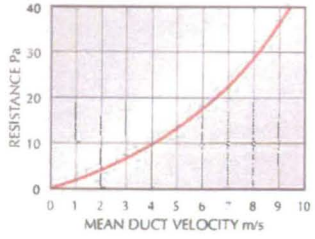


CASE AXIAL ATTENUATOR

Stock Ref. No.	Øa	bØ	Øc	d	Øe*	n	kg approx	Fitted with pod kg approx	Free area m² without pod
105 14 450	550	500	450	675	M10	8	50	73	0.15904
105 14 500	600	560	500	750	M10	12	59	87	0.19635
105 14 560	660	620	560	840	M10	12	70	102	0.24630
105 14 630	730	690	630	940	M10	12	82	120	0.31172

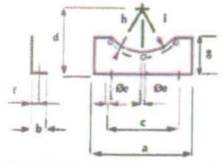
*Threaded hole to take bolt

RESISTANCE GRAPH FOR CASE ATTENUATOR FITTED WITH POD



Vent-Axia

TURBOPROP FANS
ACCESSORIES DIMENSIONS (mm)



MOUNTING FEET

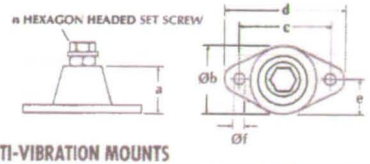
Stock Ref. No.	a	b	c	d	Øe	f	g	h	i
105 03 450	384	24	315	315	12	14	155	250	238
105 03 500	425	24	315	315	12	14	135	280	268
105 03 560	475	24	355	355	12	14	155	310	298
105 03 630	520	24	400	400	12	14	175	345	333



INLET WIRE GUARD

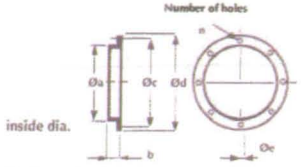
'K' factor loss 0.25

Stock Ref. No.	Øa	b
105 05 450	525	3
105 05 500	595	3
105 05 560	655	3
105 05 630	725	3



ANTI-VIBRATION MOUNTS

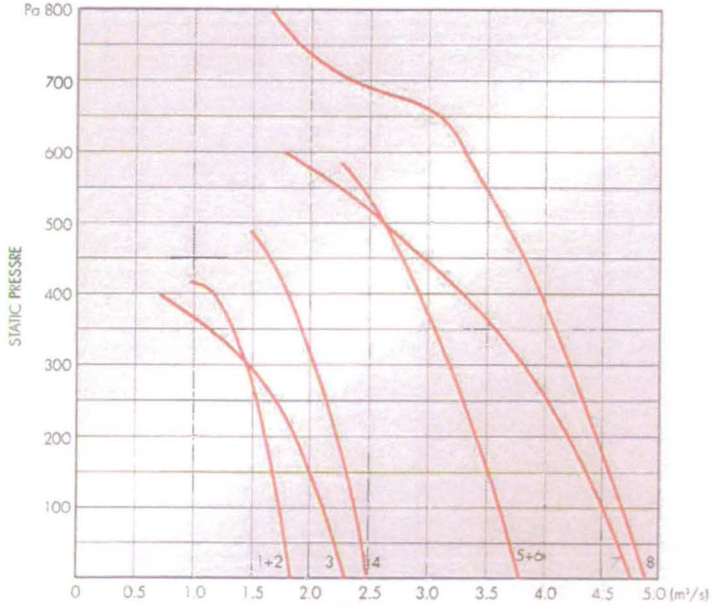
Stock Ref. No.	a	Øb	c	d	e	Øf	n	Max load kg
105 23 033	27	37	54	67	18.5	7	M8	23



COUPLING FLANGE

Stock Ref. No.	Øa	b	Øc	Ød	Øe	n
105 06 450	450	60	500	537	12	8
105 06 500	500	60	560	595	12	8
105 06 560	560	75	620	655	12	12
105 06 630	630	75	690	725	12	12

PERFORMANCE



Size	TP450/1&3	TP500/1	TP560/1&3	TP630/1	TP630/3
	1+2	3	4	5+6	7	8

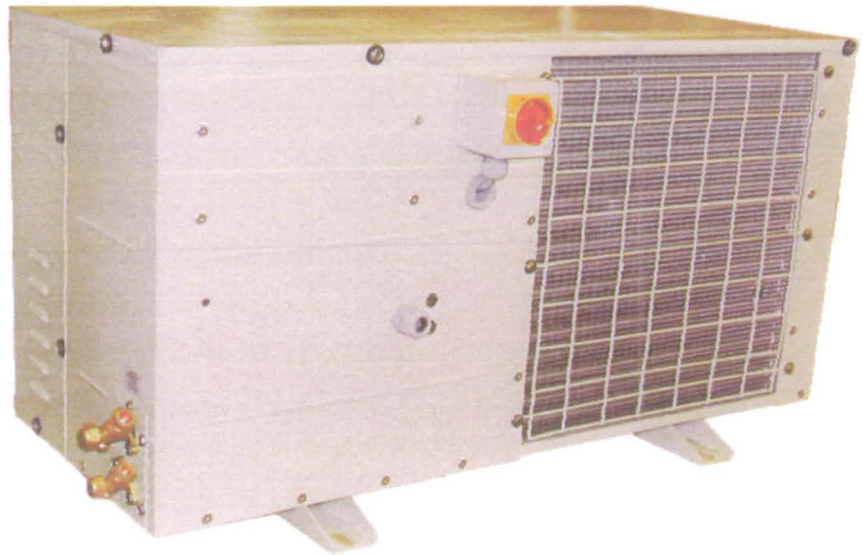
Vent-Axia

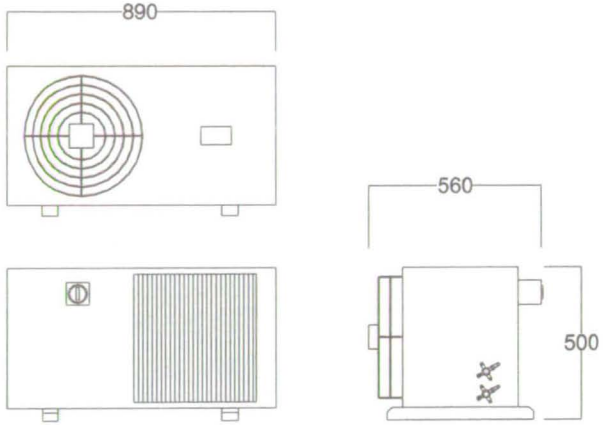
TURBOPROP FANS (TP)

APPENDIX D – CONDENSING UNIT SPECIFICATION SHEET

HOUSED HERMETIC CONDENSING UNIT

Model	Karbox 2464
Compressor	CAJ2464Z
Duty	
@ -6^{0}c Evaporating	3100 watts*
@ -30^{0}c Evaporating	1125 watts*
Dimensions	
Width	890
Depth	560
Height	500
Connections	
Suction	1/2"
Liquid	3/8"
Voltage	1~ - 220v-240v- 50Hz
Current	
Start	39 amps
Run	10.5 amps
Noise Level	
@ 1 metre	56dBA
@ 5 metre	48dBA
@ 10 metre	34dBA





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www.glendonproducts.com

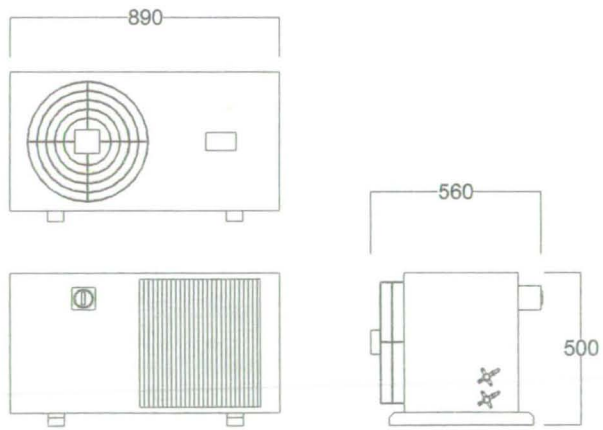
* based on condensing temperature of 55 ^{0}c

Glendon

HOUSED HERMETIC CONDENSING UNIT

Model	Karbox 2464
Compressor	CAJ2464Z
Duty	
@ -6^{0}c Evaporating	3100 watts*
@ -30^{0}c Evaporating	1125 watts*
Dimensions	
Width	890
Depth	560
Height	500
Connections	
Suction	1/2"
Liquid	3/8"
Voltage	1~ - 220v-240v- 50Hz
Current	
Start	39 amps
Run	10.5 amps
Noise Level	
@ 1 metre	56dBA
@ 5 metre	48dBA
@ 10 metre	34dBA





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* based on condensing temperature of 55 ^{0}c