PLANNING AND
BUILDING CONTROL
14 DEC 2011

Colliers INTERNATIONAL

ACOUSTIC REPORT

FOR

252-254 WILMSLOW ROAD, FALLOWFIELDS, MANCHESTER

1.0 INTRODUCTION

Our client, Papa Johns (GB) Limited, operate a national network of 150 no. (and rising) takeaway pizza outlets. The premises, which are the subject of this application, are to be operated as such a 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 being cooked.

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

In association with the document entitled supporting information on the proposed ventilation system and condensing unit submitted with the planning application, I refer to relevant acoustic information as appropriate.

2.0 SITE

The unit at 252-254 Wilmslow Road, Fallowfields, Manchester is situated on a main route within the city centre. It is in a parade of commercial units with a public house on the other side of Landcross Road and parkland on the opposite side of Wilmslow Road. There are no immediate neighbouring residential properties.

3.0 CERTIFICATIONS AND NOISE LEVELS

The fans specified in the ventilation installation system are manufactured by Vent Axia, although the contractors are permitted to install equally approved units from alternative manufacturers. Vent Axia units are considered an excellent product in the field of catering extraction and their performances achieved whilst keeping noise break out within acceptable parameters. All plant is mounted on anti-vibration mountings to isolate them from the structure and double range flexible connectors between the flue and equipment in order to minimise vibration.

Our installations are designed to include silencers compatible with the fans which further reduce noise break out. The system is designed to have a break out rating of no more than 42 DBA at three metres.

The fan specification sheets are attached to this report for information and include relevant noise levels (Appendix A).

The proposed condensing unit is required to operate the internal cold store at the premises. Papa Johns (GB) Limited used Glendon for their cold store installations including the operating plant. The unit specified for installation at this store is Karbox 2464, and product information is included at Appendix B of this pack.

Break out sound levels are recorded on the enclosed specification paperwork. The units are not in constant operation as the cold store is not in continual use and as a result average break out levels represent a figure below the advertised figure of 34 DBA at 10 metres. (The plant is fixed externally on wall mounting brackets.

4.0 CONCLUSION

The unit which is the subject of the planning application, 252-254 Wilmslow Road, Fallowfields, Manchester, is an existing commercial unit within the built-up urban area. It is surrounded by other commercial units and non-residential uses with the nearest sensitive receptor location being a first floor residential flat 3 doors along Wilmslow Road. Oxford Road is a main thoroughfare and there are no residential units in proximity of the unit.

The noise limits set out in the attached data for the kitchen and mechanical ventilation plant equipment would not adversely affect the locality by way of noise generated and would include appropriate equipment to mitigate any impact. The proposed system is considered acceptable in relation to the proposed use of the unit as a Hot Food Takeaway.

APPENDIX A

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.

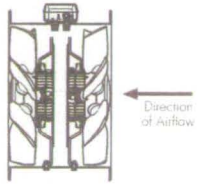
Available in four sizes: 450, 500, 560 and 630mm diameter with a performance from 0.688m³/s to 4.346m³/s (2,476m³/h to 15,645m³/h) and pressure development up to 800Pa.

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	1.859	1.800	1.741	1.673	1.605	1.431	1.197					1.24	21.60	5.40
TP500-14	1160	1	2.300	2.200	2.100	1.980	1.870	1.390	0.700					1.40	28.00	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	91	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.

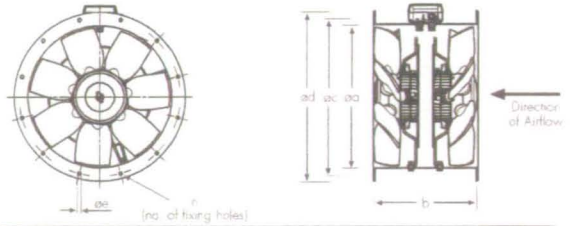
Attenuator Insertion Losses

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

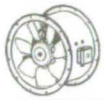
Dia	63	125	250	500	1k	2k	4k	8k
450	4	8	14	20	28	26	23	19
500	4	8	14	20	29	26	23	19
560	4	9	14	20	29	26	23	19
630	4	9	14	20	29	26	23	19

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

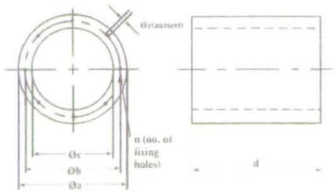





Stock Ref. No	Inlet Wire Guard Stock Ref. No.	Case Axial Attenuator Stock Ref. No.	Case Axial Attenuator incl. Pod Stock Ref. No.	Anti-Vibration Mounts Stock Ref. No.
TP450-14 TP450-34	105 05 450	105 14 450	105 00 450	105 23 033
TP500-14 TP500-34	105 05 500	105 14 500	105 00 500	105 23 033
TP560-14 TP560-34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

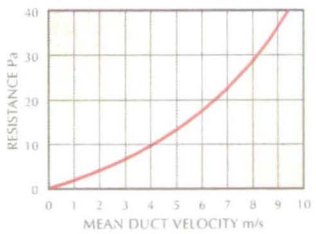


CASE AXIAL ATTENUATOR

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

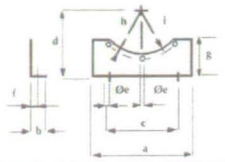
*Threaded hole to take bolt

RESISTANCE GRAPH FOR CASE ATTENUATOR FITTED WITH POD



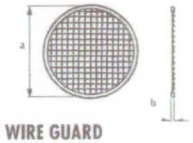
Vent-Axia

TURBOPROP FANS ACCESSORIES DIMENSIONS (mm)



MOUNTING FEET

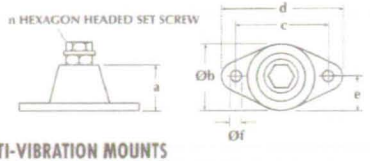
Stock Ref. No.	a	b	c	d	Øe	f	g	h	i
105 03 450	384	24	315	315	12	14	155	250	238
105 03 500	425	24	315	315	12	14	135	280	268
105 03 560	475	24	355	355	12	14	155	310	298
105 03 630	520	24	400	400	12	14	175	345	333



INLET WIRE GUARD

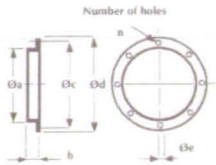
'K' factor loss 0.25

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

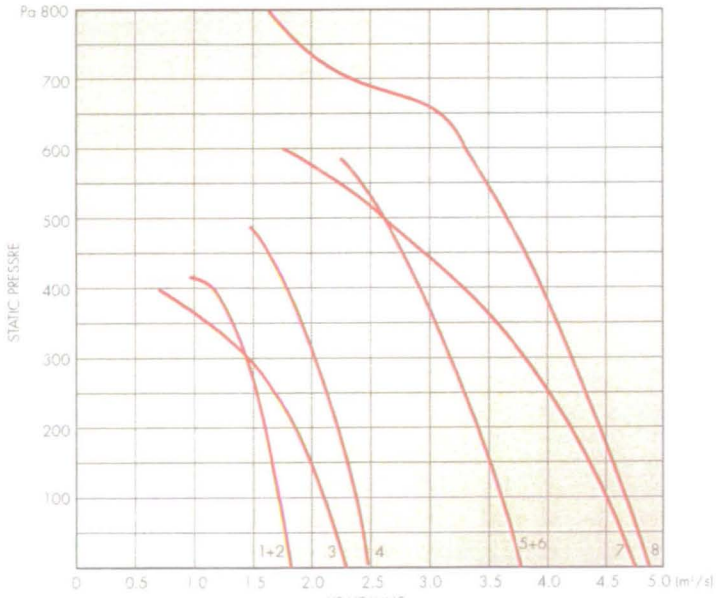
Stock Ref. No.	a	Øb	c	d	e	Øf	n	Max load kg
105 23 033	27	37	54	67	18.5	7	M8	23



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

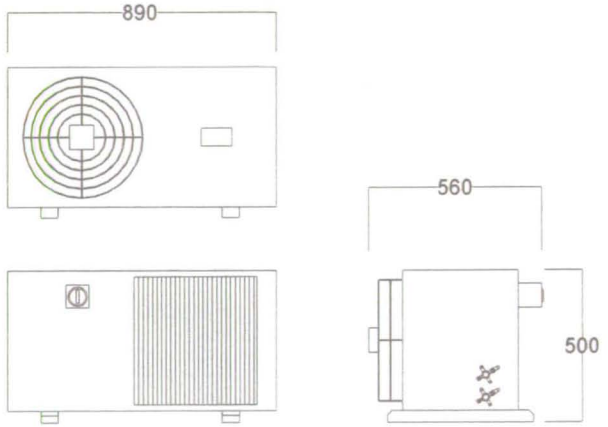
Vent-Axia

APPENDIX B

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





Glendon Products Ltd.
Unit 5 St. James Road
Corby
Northants NN18 8AL
Tel: +44 (0)1536403010
Fax: +44 (0)1536266629
www.glendonproducts.com

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