



PROCESS INSTALLATIONS

Riverside Industrial Estate, Littlehampton, West Sussex, BN17 5DF, England

Mr Jeremy Owen
Managing Director
Arundel Brewery Ltd
Unit C7
Ford Airfield Estate
Arundel
West Sussex
BN18 9DF.

Dear Jeremy

12/07/2018

Ref: - Brewhouse Project.

Further to your recent enquiry and our subsequent meeting please find below our proposal for the supply and installation of an extraction system for your "Copper" brewing vessel.

Based on our conversation it is our understanding that concerns have been raised regarding the possibility of odour generated during the brewing process being vented or exhausted outside.

The copper has a total volume of 5000 litres and is fitted with a top outlet which is a 3" RJT fitting. The outlet also has incorporated in its design a condensate trap with a drain to waste, a condensate trap will convert any escaping steam into water and gaseous air with the water going to drain and the gaseous air venting out the top

Based on previous experience with the brewing process there are three occasions when potential odours are emitted from though the top of the copper.

- When the vessel is "Free" venting
- When the vessel is being filled (Pushing air out)
- When the vessel is being heated

Proposal

Our proposal is to install an extraction system incorporating a "Maxicarb" Activated Carbon Filter Unit combined with a centrifugal inline fan and 4" ducting.

Connecting to the existing outlet on top of the Copper convert the diameter from 3" one size up to 4" run up into the roof space in 4" stainless dairy pipe then connect into 1MXB1 Maxicarb filter unit.

The filter unit can be suspended from the building portal frame utilizing a "Unistrut" frame, studding and hangers. The filter box comes with square to round transition pieces to suit the pipe work, on the downstream side of the filter box install the inline fan, we would recommend fitting flexible couplings between the fan and the pipe work (ducting) to cancel any vibration or noise.



PI. PROCESS INSTALLATIONS

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Tel 01903 730900 - Fax 01903 730234 - sales@pumpeng.co.uk - www.pumpeng.co.uk

The fan can be mounted on the same frame as the filter. The duct will then exit through the side of the building terminated with a finishing cowl and a Dektite seal.

The inline fan is supplied with a wall mounted controller so it is possible to turn the fan on or off or control the speed of the fan.

I trust we have interpreted your requirements correctly and would be pleased to offer a quotation based on the above specification.

In the meantime should you require any additional information or have any questions please do not hesitate to contact me.

Yours sincerely,

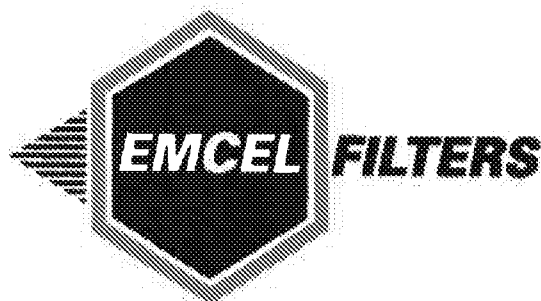


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Encl:- Maxicarb Data Sheet, Xpelair XID Centrifugal metal inline fans, Dektite seal details.

MAXICARB®

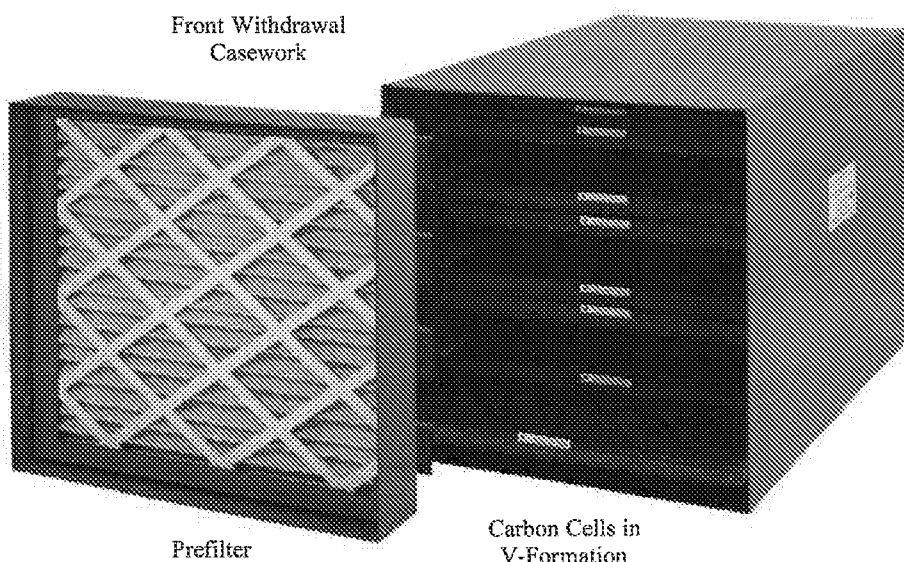
Activated Carbon Filter Units for the removal of chemical vapours, odorous and toxic gases.



Activated carbon filtration has for many years been recognised as a highly successful method of controlling dangerous and noxious gaseous contaminants. Maxicarb filters have been developed to remove and control a wide range of chemical vapours, odorous and toxic gases from airstreams where critical, high efficiency filtration and heavy duty performance is necessary.

Applications inc:

- Airports
- Breweries
- Chemical Plants
- Cosmetics
- Factories
- Hospitals
- Laboratories
- Research Units
- Tanneries
- Warehouses



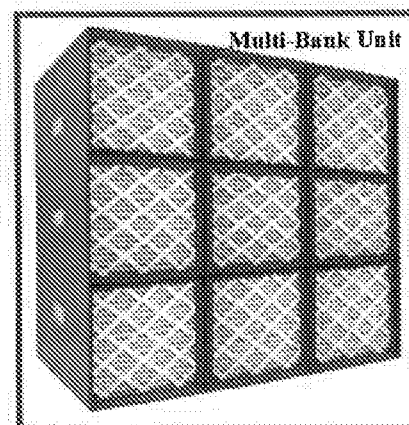
Emcel Maxicarb filters have been specified and supplied worldwide in many diverse industrial environments but are particularly suitable for applications in Laboratories, Chemical Production Plants, Industrial Complexes and Research Establishments where the intake or discharge of noxious gases are required to be controlled.

The filter unit construction allows for front, top, bottom or side, filter cell withdrawal options and all units may be supplied with a cleanable or disposable particle prefilter. Standard sizes are available but special can be manufactured to suit application.

The high quality activated carbon grades used in Maxicarb filters are capable of adsorbing a wide cross section of gas and chemical contaminants. The complex EMCEL patented cell construction enables the Maxicarb to capture a broader spectrum of gases and chemical vapours than conventional carbon filters.

The EMCEL Maxicarb construction comprises variable numbers of activated carbon cells arranged in "V" formation, giving high carbon weight/air volume loading for efficient performance and long service life.

The outer casings are manufactured in powder coated mild steel as standard, or in stainless steel, polypropylene or GRP for use in corrosive environments.



Emcel Maxicarb units are designed specifically for efficient filtration within a heavy duty environment

The EMCEL Carbon Life Prediction Service is available to assist in identifying the optimum filter cell replacement point to ensure maximum filtration efficiency coupled with cost-effective replacement.

Maxicarb Reference	Capacity (m ³ /sec)	Dwell Time (Secs)	Dimensions		
			A	B	C
1MXB1	0.25	0.2	355	610	950
1MXB2	0.25	0.3	355	610	950
1MXB3	0.25	0.5	355	610	1150
2MXB1	0.50	0.2	660	610	950
2MXB2	0.50	0.3	660	610	950
2MXB3	0.50	0.5	660	610	1150
3MXB1	0.75	0.2	965	610	950
3MXB2	0.75	0.3	965	610	950
3MXB3	0.75	0.5	965	610	1150
4MXB1	1.00	0.2	1270	610	950
4MXB2	1.00	0.3	1270	610	950
4MXB3	1.00	0.5	1270	610	1150

Diagram illustrating the front and side elevations of a rectangular prism. The front elevation is a shaded rectangle with width B and height A . The side elevation is an unshaded rectangle with width C and height A . The height A is indicated by a vertical double-headed arrow between the two rectangles.

The maximum operating conditions for the Maxicarb filter are 50°C and 85% RH. The filter should in no circumstances be subjected to temperatures in excess of 70°C. Care must be taken over the handling and disposal of contaminated filter cells consistent with the gaseous contaminant adsorbed.

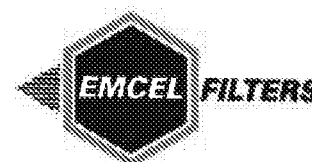


- Replacement Carbon Panels
- Odour Control Filters
- Particle Filters
- HEPA Filters
- Washable/Cleanable Panels
- Special Filters



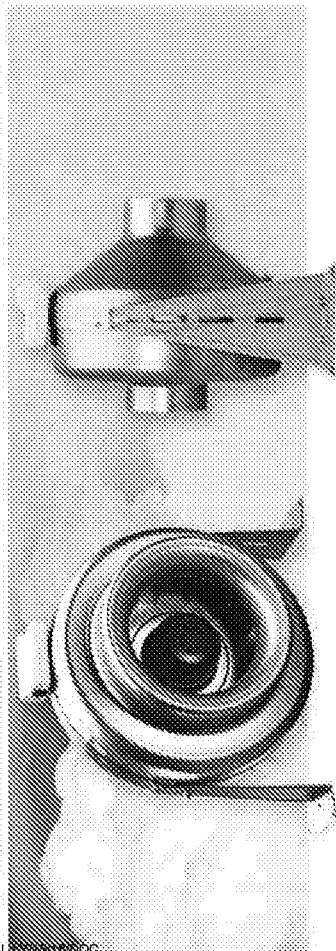
Certificate No. 864 24139

www.emcelfilters.co.uk E-mail: filtration@emcelfilters.co.uk



Xpelair XID

Centrifugal metal inline fans



Key features

Type	Metal inline
Application	Commercial/Industrial
Control options	Speed control and humidity/PNR sensing

The Range

Inline duct systems have grown in popularity as a method of concealed ducted ventilation over the past two decades. The Xpelair XID inline range is engineered for trouble free operation and delivered complete with adjustable mounting bracket.

The practical, reliable fans are ideal for ducted applications in shops, schools, factories, offices, pubs, hotels, restaurants and kitchens. They are available in a variety of duct size diameters to suit any application.

The range is manufactured in zinc coated corrosion resistant sheet metal with 31mm long spigot connections for ease of connection to ductwork.

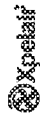
The range benefits from external rotor motor and impeller assemblies, whilst the connection box is easily accessible on top of the unit. The fan unit is speed controllable to offer flexibility and individual control.

A full choice of ventilation accessories is available to complement this range to design a complete system.



Select the right product for your application

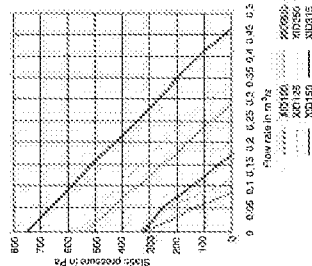
	XID10	XID12.5	XID15	XID17.5	XID20	XID25	XID30	XID35	XID40	XID45
Reference motor	300/104	300/104	300/104	300/104	300/104	300/104	300/104	300/104	300/104	300/104
Static pressure (mm)	9	10	11	12	13	14	15	16	17	18
Extract performance (m³/s)	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6
Static pressure head (mm H ₂ O)	85	85	85	85	85	85	85	85	85	85
Maximum static pressure (mm H ₂ O)	85	85	85	85	85	85	85	85	85	85
Weight (kg)	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5
Speed (rpm)	1450	1450	1450	1450	1450	1450	1450	1450	1450	1450



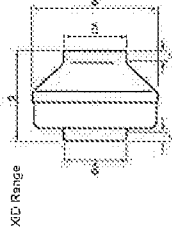
Models

Xpelair XID models
 XID100 Ref: 00101AA
 XID125 Ref: 00102AA
 XID150 Ref: 00103AA
 XID200 Ref: 00104AA
 XID250 Ref: 00105AA
 XID315 Ref: 00106AA
 Compact and robust zinc steel construction
 Pressure developing centrifugal inline fans suitable for extract or intake applications
 Extra length 30mm spigots
 Can be mounted at any angle using the universal insulating bracket supplied
 External rotor motor - easily accessed and lubricated for life
 Insulation Class F. Rated with safety thermostat over-temperature protection - protected to IPX4
 Impeller is backward curved
 Supply voltage 220-240V 50Hz

Performance



Dimensions



Model	Dimensions (mm)	C	D
XID100	97	8	240
XID125	97	8	240
XID150	97	8	240
XID200	117	8	240
XID250	117	8	240
XID315	117	8	240
XID350	117	8	240
XID400	117	8	240
XID450	117	8	240

Typical Specifications on page 160.
 Wiring Diagrams on page 171.

Controllers

Inline Fan Controller XIC1
 Ref: 21850AV
 Bidirectional speed control for infinitely variable speeds. Complete with down 'On' indicator light

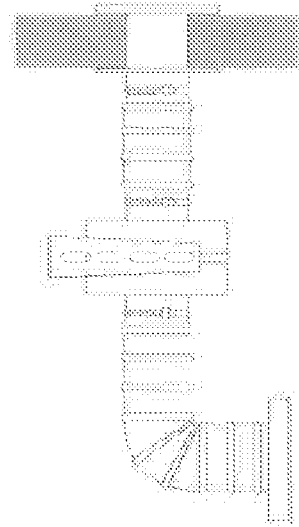


Remote Humidistat NRH
 Ref: 21850AV
 Stand alone humidistat switches fan On/Off when RH reaches pre-set levels. Complete with indicator override switch
 Remote Time Controller DT20B
 Ref: 21850AV
 Fan adjustable run on timer (0-20mins)
 Passive Infrared Sensor XPIEA
 Ref: 21871AA
 Activates fan via body movement. Ideal for infrequently used public spaces
 Built in timer to prevent nuisance tripping

Installation and Accessories

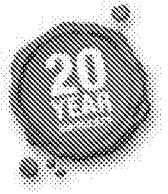
An extensive range of accessories are available to complete the installation of the Xpelair XID Range of inline centrifugal fans.

Xflex FD
 Worm drive clips WDC
 Grille box GB
 Egg crate ceiling grille CG
 Ceiling diffuser grille DC
 Circular silencer SC
 Inline duct heater IDH
 Air operator: Sluice shutter XLS
 Sluice plate SP
 Wet duct WD



Dektite®

Product Price Guide

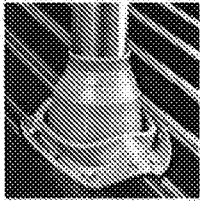


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Flashings for Metal Roofs

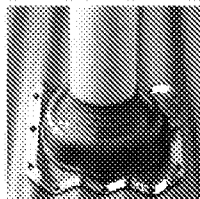


Dektite® Original

The Original watertight Flashing for Metal Roofs

The original watertight flashing for hot or cold flues and pipes on metal roofs. A tough weathertight seal and a strong flexible base.

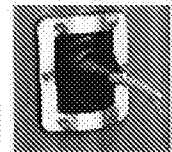
Pipe External	Roof Pitch	Base Size Ø	Code	List Price	Code	List Price
			Black EPDM	Black EPDM	Red Silicone	Red Silicone
0-35mm	0-45°	92mm	DF100	8.14	-	-
5-65mm	0-40°	121mm	DF101	10.20	DF201	13.94
45-80mm	0-40°	156mm	DF102	13.47	DF202	19.17
5-127mm	0-40°	196mm	DF103	17.79	DF203	26.09
73-160mm	0-40°	238mm	DF104	23.01	DF204	33.85
108-190mm	0-40°	272mm	DF105	27.02	DF205	37.38
125-230mm	0-40°	318mm	DF106	32.36	DF206	48.63
150-280mm	0-40°	368mm	DF107	50.27	DF207	76.63
175-330mm	0-40°	418mm	DF108	59.93	DF208	91.10
254-483mm	0-40°	642mm	DF109	119.30	DF209	172.05



Dektite® Premium

Perfect for Flashing Pipes on Metal Roofs

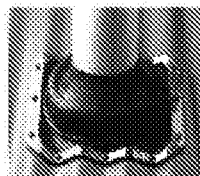
The multi-application flashing in a highly durable EPDM or silicone, edged with a flexible aluminium band, flashes hot or cold flues and pipes on metal roofs. The square base fits any prepared hole on most roof profiles.



Dektite® Mini
for small penetrations

Pipe External	Roof Pitch	Base Size	Code	List Price	Code	List Price	Code	List Price
			Black EPDM	Black EPDM	Grey EPDM	Grey EPDM	Red Silicone	Red Silicone
0-35mm	0-45°	100 x 100mm	DFE100B	7.35	DFE100G	8.31	DFE200RE	9.56
5-55mm	0-45°	139 x 139mm	DFE101B	9.22	DFE101G	10.42	DFE201RE	12.68
5-76mm	0-45°	178 x 178mm	DFE102B	12.21	DFE102G	13.80	DFE202RE	17.29
5-127mm	0-45°	221 x 221mm	DFE103B	16.08	DFE103G	18.15	DFE203RE	23.79
75-175mm	0-45°	280 x 280mm	DFE104B	20.80	DFE104G	23.52	DFE204RE	31.16
100-200mm	0-45°	310 x 310mm	DFE105B	23.10	DFE105G	26.13	DFE205RE	37.49
125-230mm	0-45°	363 x 363mm	DFE106B	25.60	DFE106G	28.94	DFE206RE	44.05
150-300mm	0-45°	456 x 456mm	DFE107B	50.03	DFE107G	56.48	DFE207RE	70.97
170-355mm	0-45°	496 x 496mm	DFE108B	60.09	DFE108G	67.87	DFE208RE	94.49
230-508mm	0-45°	681 x 681mm	DFE109B	80.49	DFE109G	90.96	DFE209RE	141.79

*For use in solar applications



Dektite® EZi-Seal™

Forget the Silicone - Just screw it down

Features a revolutionary non-absorbant and non-porous sponge gasket that seals by compression, even in wet conditions, it hugs the roof line to provide a watertight seal without the need for silicone sealant

Pipe External	Roof Pitch	Base Size	Code	List Price
			Black EPDM	Black EPDM
0-35mm	0-45°	100 x 100mm	DFE100BEZ	9.33
5-55mm	0-45°	139 x 139mm	DFE101BEZ	11.72
5-76mm	0-45°	178 x 178mm	DFE102BEZ	15.51
5-127mm	0-45°	221 x 221mm	DFE103BEZ	20.42
75-175mm	0-45°	280 x 280mm	DFE104BEZ	26.43
100-200mm	0-45°	310 x 310mm	DFE105BEZ	28.96
125-230mm	0-45°	363 x 363mm	DFE106BEZ	30.72
150-300mm	0-45°	456 x 456mm	DFE107BEZ	60.04
170-355mm	0-45°	496 x 496mm	DFE108BEZ	72.20
230-508mm	0-45°	681 x 681mm	DFE109BEZ	96.59

Red and grey Silicone will withstand constant temperature at the roofline of -30 °C to 200 °C and up to 230 °C intermittently.