

# Cross Keys Restaurant Extraction Report

Cross Keys Restaurant, Northern Quarter, Manchester

Eve Goodwin

10/15/2021



## **Opening Statement**

This report has been prepared to assist the client in gaining planning permission for the aforementioned site; it is to be read in conjunction with Mainland Catering Equipment drawings 7165-5B and 7165-6.

This report has been collated to detail the extraction scheme, proposed by Mainland Catering Equipment at The Cross Keys, Manchester.

The report contains all technical data and specifications that are required for the extraction system to function completely. The system is detailed in drawing 7165-5b, the layout is imposed within the building layout in drawing 7165-6. If further information or resources are required please contact Eve Goodwin at Mainland Catering Equipment. The system is in accordance to DW173 to manage extraction of solid fuel catering equipment.

## Ventilation Statement

The position of the canopy and the flue forming the ventilation and extraction system is shown on MCE drawing **7165-5b**

The canopy is to be located centrally and to overhang the cooking appliances by a minimum of 300mm and positioned at a height of 2000mm above finished floor level.

The extractor is comprised of:

- 12No. Veritech solid fuel baffle type filters.
- 1 No. fire rated bespoke galvanized ducting
- 2No. 1D silencers
- 1No. Woods Bifurcated axial fan
- Provision for odour management – OC3 Ozone unit.
- This duct will continue vertically to terminate with an accelerator cone.
- The finish of the visible part of the flue is to be powder coated to match the roof.
- The flue is positioned unobtrusively with only the terminal box being evident.
- The flue will be installed with anti-vibration mountings and using attenuators either side of the fan will provide a noise reduction.
- The fan motor in the flue will have an efflux velocity of between 8 and 15 m/s and fitted on anti-vibration mountings and joined to the flue with flexible couplings.

The whole system is to be regularly cleaned and maintained.

SYSTEM ACCOUSTIC INFORMATION

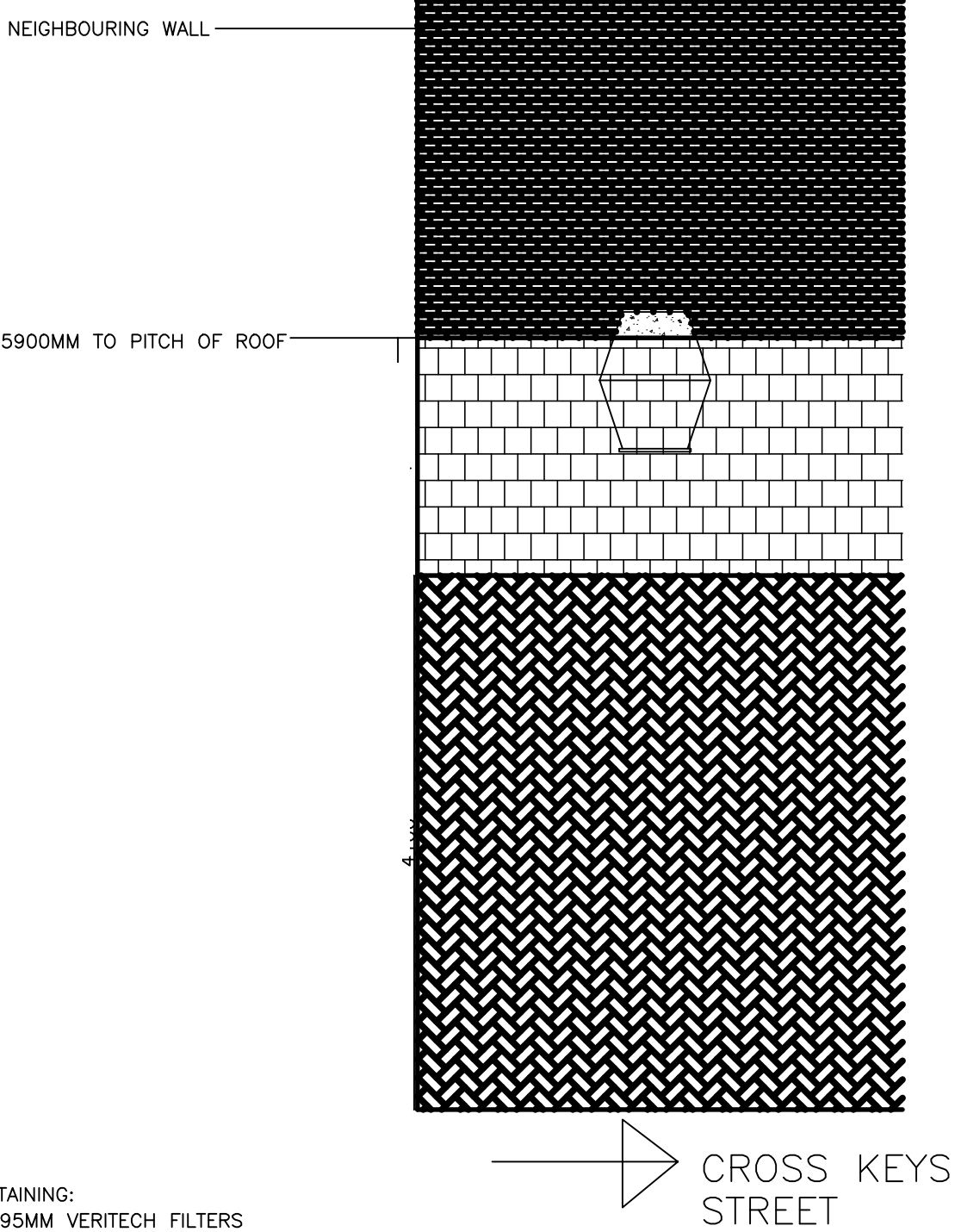
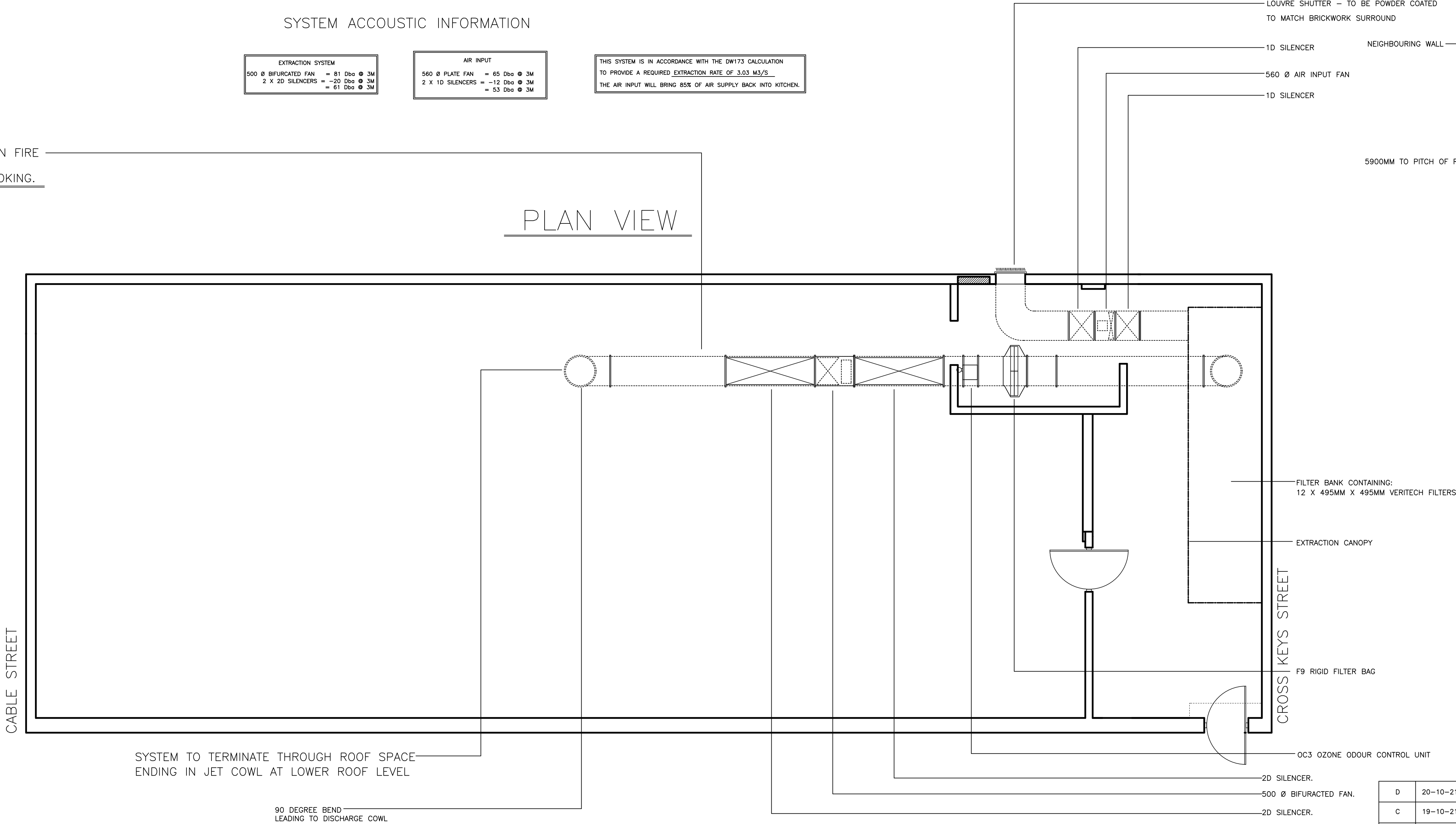
| EXTRACTION SYSTEM    |                |  |
|----------------------|----------------|--|
| 500 Ø BIFURCATED FAN | = 81 Dba @ 3M  |  |
| 2 X 20 SILENCERS     | = -20 Dba @ 3M |  |
|                      | = 61 Dba @ 3M  |  |

| AIR INPUT        |                |  |
|------------------|----------------|--|
| 560 Ø PLATE FAN  | = 65 Dba @ 3M  |  |
| 2 X 10 SILENCERS | = -12 Dba @ 3M |  |
|                  | = 53 Dba @ 3M  |  |

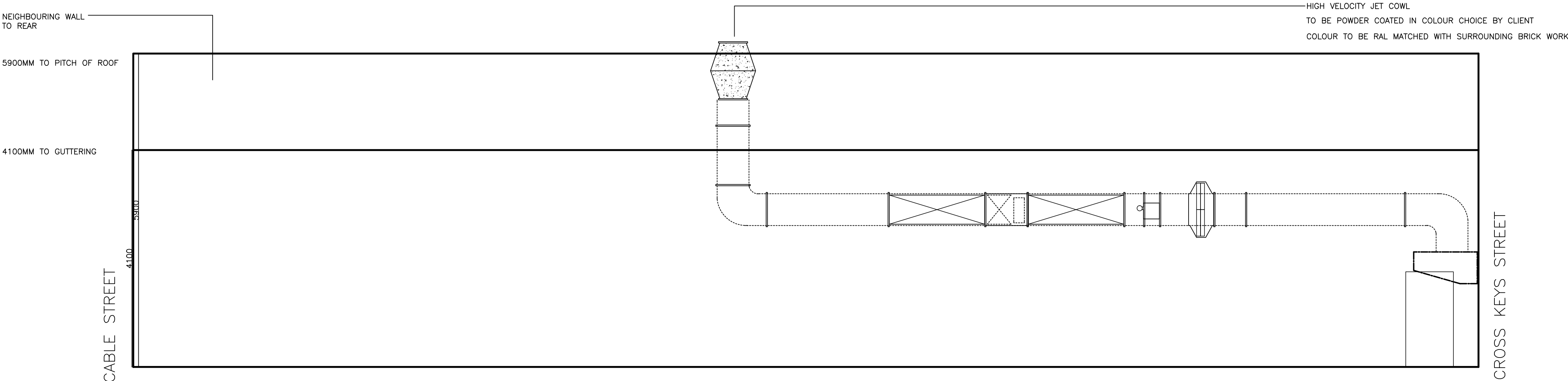
THIS SYSTEM IS IN ACCORDANCE WITH THE DW173 CALCULATION  
TO PROVIDE A REQUIRED EXTRACTION RATE OF 3.03 M3/S  
THE AIR INPUT WILL BRING 85% OF AIR SUPPLY BACK INTO KITCHEN.

ALL DUCT WORK TO BE COMPLETED IN FIRE  
RATED DUCT DUE TO SOLID FUEL COOKING.

PLAN VIEW



CROSS KEYS STREET ELEVATION (CROSS SECTION)



| Rev. | Date.    | Revision.                                                | By.  |
|------|----------|----------------------------------------------------------|------|
| D    | 20-10-21 | JET COWL POSITION AMENDED.                               | E.G. |
| C    | 19-10-21 | AIR INPUT & JET COWL POSITION AMENDED.                   | E.G. |
| B    | 15-10-21 | AIR INPUT POSITION AMENDED.                              | E.G. |
| A    | 13-10-21 | AMENDED JET COWL POSITION FOLLOWING COMMENTS FROM CLIENT | E.G. |

MAINLAND CATERING  
EQUIPMENT LTD.

Unit 1a, Fountain Mill, Church Street, Rakefoot, Haslingden,  
Rossendale, Lancashire, BB4 5RE  
Tel : 01706 244810 Fax: 01706 244811

Client.

CROSS KEYS RESTAURANT

Job Title.

CROSS KEYS, MANCHESTER

Drawing Title.

EXTRACTION SYSTEM

Scale.

1:50

Drawn by.

E. GOODWIN

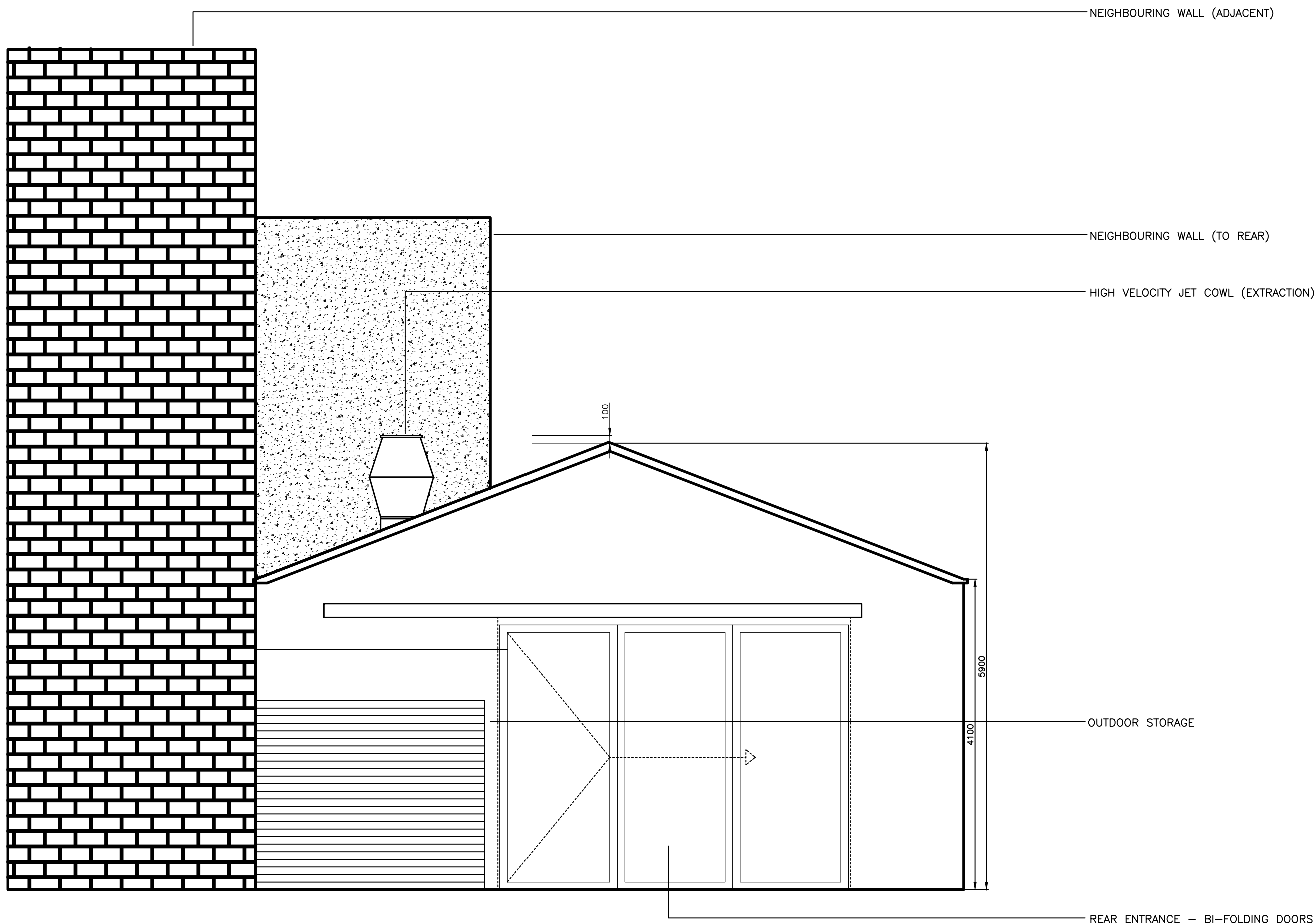
Drg No.

7165-5

D

Date.

20-10-2021

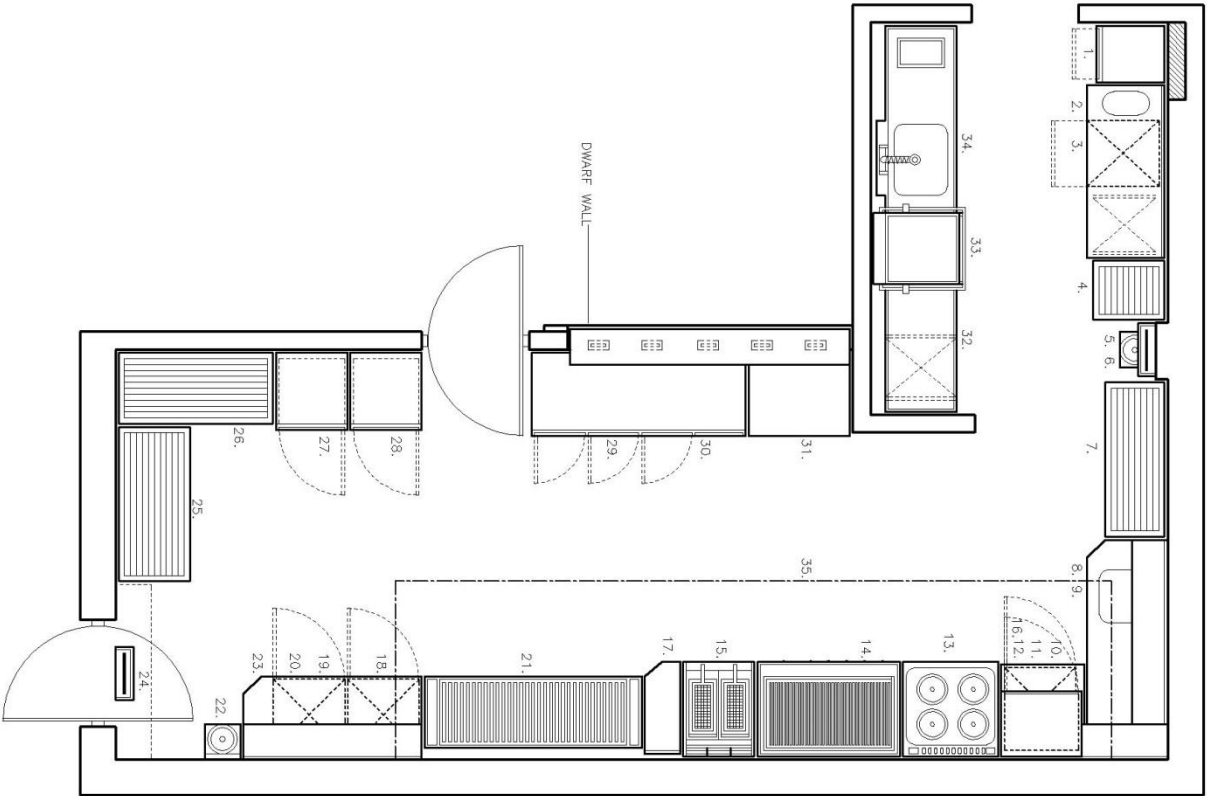


CABLE STREET ELEVATION

|                                                                                                                                                                                                                      |            |                                           |                |
|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------|-------------------------------------------|----------------|
|                                                                                                                                                                                                                      |            |                                           |                |
| B                                                                                                                                                                                                                    | 20-10-2021 | JET COWL POSITION AMENDED.                | E.G.           |
| A                                                                                                                                                                                                                    | 19-10-2021 | AIR INPLUT AND JET COWL POSITION AMENDED. | E.G.           |
| Rev.                                                                                                                                                                                                                 | Date.      | Revision.                                 | By.            |
| <div><div>MAINLAND CATERING<br/>EQUIPMENT LTD.</div><div>Unit 1a, Fountain Mill, Church Street, Rakefoot, Haslingden,<br/>Rossendale, Lancashire, BB4 5RE<br/>Tel : 01706 244810      Fax : 01706 244811</div></div> |            |                                           |                |
| Client.<br>CROSS KEYS STREET RESTAURANT                                                                                                                                                                              |            |                                           |                |
| Job Title.<br>CROSS KEYS STREET, MANCHESTER                                                                                                                                                                          |            |                                           |                |
| Drawing Title.<br>EXTRACTION LAYOUT REAR ELEVATION                                                                                                                                                                   |            |                                           | Scale.<br>1:50 |
| Drawn by.<br>E. GOODWIN                                                                                                                                                                                              |            | Drg. No.<br>7165-6                        | Rev.<br>B      |
| Date.<br>20-10-21                                                                                                                                                                                                    |            |                                           |                |

Kitchen Layout

- 1. ICE MAKER.
- 2. OVAL BOWL SINK UNIT.
- 3. UNDERCOUNTER GLASSWASHER.
- 4. STORAGE RACK.
- 5. WASH HAND BASIN.
- 6. INSECT KILLER.
- 7. STORAGE RACK.
- 8. SINGLE BOWL SINK UNIT.
- 9. WALL SHELF.
- 10. WALL BENCH.
- 11. UNDERCOUNTER REFRIGERATOR.
- 12. WALL SHELF.
- 13. FOUR RING INDUCTION TOP.
- 14. CHARGRILL.
- 15. FRYER.
- 16. SMOKER.
- 17. INFILL BENCH.
- 18. UNDERCOUNTER FREEZER.
- 19. WALL BENCH.
- 20. UNDERCOUNTER REFRIGERATOR.
- 21. BARBECUE.
- 22. WASH HAND BASIN.
- 23. WALL SHELF.
- 24. INSECT KILLER.
- 25. STORAGE RACK.
- 26. STORAGE RACK.
- 27. UPRIGHT FREEZER.
- 28. UPRIGHT REFRIGERATOR.
- 29. THREE DOOR COUNTER REFRIGERATOR.
- 30. HEATED GANTRY.
- 31. WALL BENCH.
- 32. DISHWASH EXIT TABLE.
- 33. PASS THROUGH DISHWASHER.
- 34. DISHWASH DIRTIES TABLE.
- 35. EXTRACTION CANOPY.
- 36. AIR INPUT – NOT SHOWN.
- 37. WALL CLADDING – NOT SHOWN.



|                                                        |  |                           |  |
|--------------------------------------------------------|--|---------------------------|--|
| Job Title:<br><b>CROSS KEYS, MANCHESTER</b>            |  | Scale:<br><b>1:20</b>     |  |
| Drawing Title:<br><b>LAYOUT OF CATERING FACILITIES</b> |  | Rev. No.<br><b>7165-4</b> |  |
| Drawn By:<br><b>E. GOODWIN</b>                         |  | Rev.<br><b>A</b>          |  |
| Date:<br><b>06-10-2021</b>                             |  |                           |  |

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Tel : 01706 244810 Fax: 01706 244811

|      |      |                                           |  |      |  |
|------|------|-------------------------------------------|--|------|--|
| A    |      | REVISED BY COMPANY ENGINEERING DEPARTMENT |  | REV. |  |
| Rev. | Date | Revision                                  |  | By   |  |

# THE MERLIN RANGE

## MERLIN CT1750 SYSTEM

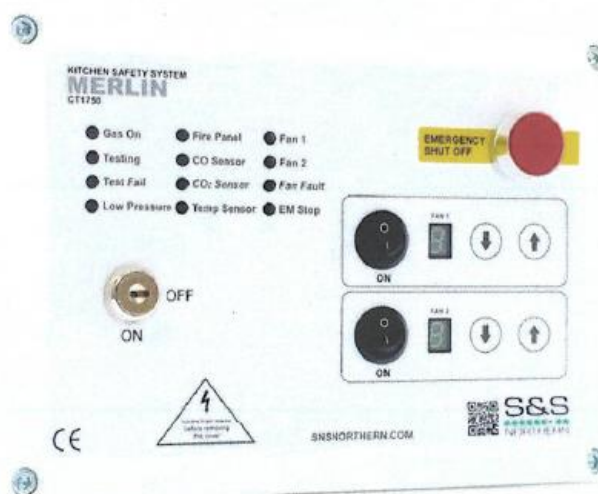
*The Merlin CT1750 System is an air quality control system.*

*This panel acts as an interlock between the ventilation and the gas solenoid valve and also controls the fan speed via 0-10v DC output.*

*The 1750 also monitors carbon dioxide and carbon monoxide levels in the kitchen.*

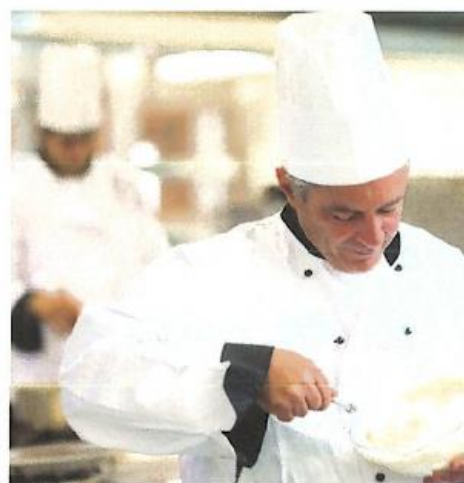
The system is compatible with both current monitors and air pressure differential switches and can interlock with up to 2 fans.

The 1750 can also incorporate gas proving for when the gas appliances do not have flame failure devices.



### Key Features of the Merlin CT1750 System

- Complies with BS6173
- Carbon monoxide and Dioxide monitoring
- Allows manual fan speed control (via 0-10v dc output)
- Clear LED display for system indications
- Ideal safety backup for solid fuel appliances
- Interlocking with fans using either Air PD Switches or Fan Current Sensors.
- Automatically increases the speed of the fans if used with CO2 and CO detectors, if detectors go into alarm, even if the panel is switched to the "off" position.
- Optional gas proving facility
- Easy Installation
- Will accept remote emergency knock-off buttons
- Can link to fire alarm or BMS systems
- Covered by S&S Northern Ltd 3 year warranty.



# KITCHEN EQUIPMENT ENGINEERED TO MEET BS6173

The Merlin CT1750 System has two built in 0-10V dc outputs, this is designed to control fan controllers which will in turn increase the speed of a fans should any Carbon Dioxide or Carbon Monoxide detector that is connected to the panel goes into an alarm condition. The fans can also be controlled manually from the panel using the up & down buttons located on the panel fascia.

The Merlin 1750 has the facility for connection of a Merlin Carbon Dioxide detector. Should the CO2 detector go into an alarm condition a signal will be sent to the 1750 panel, the CO2 LED on the panel will light and the gas solenoid valve will close. The 1750 will automatically increase the fans to reduce the CO2 levels. The gas supply can not be reinstated until the CO2 has reduced to an acceptable level.

If a gas solenoid valve is closed in a commercial kitchen that is fitted with standard gas ovens and grills the gas appliances will no longer give off dangerous gases such as Carbon Monoxide. However where solid fuel appliances such as charcoal ovens and grilles are installed there is a possibility that the coals will continue to smoulder and therefore produce harmful Carbon Monoxide even when the appliance is no longer being used.

If the detectors alarm due to higher than normal levels of gases being present in the kitchen, the fans will be instantly boosted to full speed, even if the Merlin CT1750 System is turned in the "off" position. Once the gases have been cleared, the fans will be shut down, ensuring the kitchen doesn't incur any unnecessary running costs.

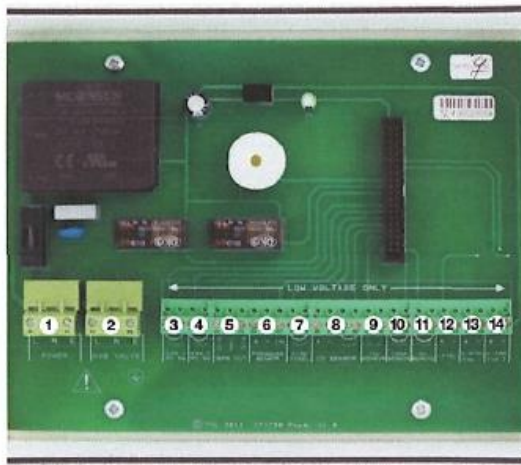
If the detectors go into an alarm condition during normal working conditions the fans will be boosted to maximum speed, the relevant "gas sensor" LED on the panel fascia will illuminate and the gas solenoid valve will automatically close. The gas valve cannot be reinstated until the gas has cleared.

Ventilation/gas Interlock ensures the gas solenoid valve cannot be opened until any fans connected to the panel are operating. If at any time the fan fails a signal will be sent to close any gas solenoid valve that is connected to the panel, the "fan fault" LED relating to the fan that has failed will flash and the gas solenoid valve will close.

The gas pressure proving can be used using our gas pressure transducer fixed into the downstream port of the gas solenoid valve. If the Merlin CT1750 is fitted with a gas pressure transducer and detects there is a drop in gas pressure, or a gas leak, within the 30 second start-up period, the gas solenoid valve will not be allowed to open and the panel will show "test fail". If the gas line is found to be sound during the 30 second test period the panel will go to "Gas on" and the gas solenoid valve will open. If the incoming gas pressure drops below 12mb, for more than 10 seconds, the gas valve will shut and the "pressure low" LED will illuminate.

#### Merlin CT1750 Box Dimensions

|               |              |
|---------------|--------------|
| <b>Height</b> | <b>178mm</b> |
| <b>Length</b> | <b>254mm</b> |
| <b>Depth</b>  | <b>62mm</b>  |



**S&S Northern has a full technical team available on 01257 470 983 or if you are based in the South East please call 01702 291 725**

#### Merlin CT1750 System Wiring Diagram

1. 230V AC power supply
2. 230V AC output to gas valve (3A)
3. Fan 1 interlocking input - N/C when fan on, open when fan off (volt free)
4. Fan 2 interlocking input - As above
5. Terminal for BMS connections
6. Pressure transducer wired to terminal - (if pressure proving is req.)
7. Fire alarm connection - N/C, open in alarm condition (volt free)
8. CO (Carbon monoxide) terminal (+ & - is a 24VDC supply to power the sensor / N/C switch, open in alarm condition - Volt free)
9. CO2 (Carbon Dioxide) terminal - N/C switch, open in alarm condition (volt free)
10. For connecting a temperature duct sensor - N/C - open in alarm condition (volt free)
11. For connecting a remote knock off button - N/C switch, open in alarm condition (volt free)
12. 12VDC permanent output
13. Fan 1, 0-10V output (This voltage will be increased and decreased via the up/down switches located on the panel fascia. This enables us to regulate the fan speeds via an external speed controller which can accept this control signal)
14. Fan 2, 0-10V output (As above)



**Northern Fan Supplies Ltd**  
**Technical Data Sheet**  
**JM Bifurcated 200 Deg C**



| Quotation Number                    | :                   |                                  | Project Code                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    | :   | BA-21396-2                |    |                     |    |         |             |  |  |  |  |         |  |    |     |     |     |    |    |    |    |     |             |        |    |    |    |     |    |    |    |    |     |    |         |    |    |     |    |    |    |    |    |     |    |
|-------------------------------------|---------------------|----------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----|---------------------------|----|---------------------|----|---------|-------------|--|--|--|--|---------|--|----|-----|-----|-----|----|----|----|----|-----|-------------|--------|----|----|----|-----|----|----|----|----|-----|----|---------|----|----|-----|----|----|----|----|----|-----|----|
| Project Name                        | :                   | Crosskeys - revision             | Customer                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        | :   | Mainland Catering         |    |                     |    |         |             |  |  |  |  |         |  |    |     |     |     |    |    |    |    |     |             |        |    |    |    |     |    |    |    |    |     |    |         |    |    |     |    |    |    |    |    |     |    |
| Item Reference:                     | :                   | Extract Option 2                 | Date:                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           | :   | Tuesday, October 12, 2021 |    |                     |    |         |             |  |  |  |  |         |  |    |     |     |     |    |    |    |    |     |             |        |    |    |    |     |    |    |    |    |     |    |         |    |    |     |    |    |    |    |    |     |    |
| Fan Code                            | :                   | 50JM.BIF/20/2/6/22               | 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. |     |                           |    |                     |    |         |             |  |  |  |  |         |  |    |     |     |     |    |    |    |    |     |             |        |    |    |    |     |    |    |    |    |     |    |         |    |    |     |    |    |    |    |    |     |    |
| Fan Diameter / Size                 | :                   | 500 Size / mm                    |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |     |                           |    |                     |    |         |             |  |  |  |  |         |  |    |     |     |     |    |    |    |    |     |             |        |    |    |    |     |    |    |    |    |     |    |         |    |    |     |    |    |    |    |    |     |    |
| Blades                              | :                   | 6                                |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |     |                           |    |                     |    |         |             |  |  |  |  |         |  |    |     |     |     |    |    |    |    |     |             |        |    |    |    |     |    |    |    |    |     |    |         |    |    |     |    |    |    |    |    |     |    |
| Fan Speed                           | :                   | 2950 rpm                         |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |     |                           |    |                     |    |         |             |  |  |  |  |         |  |    |     |     |     |    |    |    |    |     |             |        |    |    |    |     |    |    |    |    |     |    |         |    |    |     |    |    |    |    |    |     |    |
| Velocity                            | :                   | 15.5 m/s                         |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |     |                           |    |                     |    |         |             |  |  |  |  |         |  |    |     |     |     |    |    |    |    |     |             |        |    |    |    |     |    |    |    |    |     |    |         |    |    |     |    |    |    |    |    |     |    |
| Blade Angle                         | :                   | 22°                              | 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.                                                                                                                                                                                                                                       |     |                           |    |                     |    |         |             |  |  |  |  |         |  |    |     |     |     |    |    |    |    |     |             |        |    |    |    |     |    |    |    |    |     |    |         |    |    |     |    |    |    |    |    |     |    |
| Installation Type / Form of Running | :                   | D / B (Horizontal)               |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |     |                           |    |                     |    |         |             |  |  |  |  |         |  |    |     |     |     |    |    |    |    |     |             |        |    |    |    |     |    |    |    |    |     |    |         |    |    |     |    |    |    |    |    |     |    |
| Fan Casing                          | :                   | Long                             |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |     |                           |    |                     |    |         |             |  |  |  |  |         |  |    |     |     |     |    |    |    |    |     |             |        |    |    |    |     |    |    |    |    |     |    |         |    |    |     |    |    |    |    |    |     |    |
| Requested Duty                      | :                   | 3.03m³/s @ 557 Pa (static)       |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |     |                           |    |                     |    |         |             |  |  |  |  |         |  |    |     |     |     |    |    |    |    |     |             |        |    |    |    |     |    |    |    |    |     |    |         |    |    |     |    |    |    |    |    |     |    |
| Outlet Dynamic Pressure             | :                   | 145 Pa                           |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |     |                           |    |                     |    |         |             |  |  |  |  |         |  |    |     |     |     |    |    |    |    |     |             |        |    |    |    |     |    |    |    |    |     |    |         |    |    |     |    |    |    |    |    |     |    |
| Duty Shaft Power                    | :                   | 3.32 kW                          | Acoustic figures for adjusted running speeds have been interpolated and are for reference only.                                                                                                                                                                                                                                                                                                                                                                                                                                                 |     |                           |    |                     |    |         |             |  |  |  |  |         |  |    |     |     |     |    |    |    |    |     |             |        |    |    |    |     |    |    |    |    |     |    |         |    |    |     |    |    |    |    |    |     |    |
| Max Shaft Power                     | :                   | 3.62 kW                          |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |     |                           |    |                     |    |         |             |  |  |  |  |         |  |    |     |     |     |    |    |    |    |     |             |        |    |    |    |     |    |    |    |    |     |    |         |    |    |     |    |    |    |    |    |     |    |
| Total Efficiency                    | :                   | 65.2 %                           |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |     |                           |    |                     |    |         |             |  |  |  |  |         |  |    |     |     |     |    |    |    |    |     |             |        |    |    |    |     |    |    |    |    |     |    |         |    |    |     |    |    |    |    |    |     |    |
| Motor Frame                         | :                   | 112M [ Class F ]                 |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |     |                           |    |                     |    |         |             |  |  |  |  |         |  |    |     |     |     |    |    |    |    |     |             |        |    |    |    |     |    |    |    |    |     |    |         |    |    |     |    |    |    |    |    |     |    |
| Motor Rating                        | :                   | 4.00 kW [ IE3 ]                  |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |     |                           |    |                     |    |         |             |  |  |  |  |         |  |    |     |     |     |    |    |    |    |     |             |        |    |    |    |     |    |    |    |    |     |    |         |    |    |     |    |    |    |    |    |     |    |
| Full Load Current                   | :                   | 7.5 A                            | This Offer is made subject to the latest version of our A100-19 Terms and Conditions, a copy of which can be made available on request.                                                                                                                                                                                                                                                                                                                                                                                                         |     |                           |    |                     |    |         |             |  |  |  |  |         |  |    |     |     |     |    |    |    |    |     |             |        |    |    |    |     |    |    |    |    |     |    |         |    |    |     |    |    |    |    |    |     |    |
| Starting Current                    | :                   | 57.8 A                           |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |     |                           |    |                     |    |         |             |  |  |  |  |         |  |    |     |     |     |    |    |    |    |     |             |        |    |    |    |     |    |    |    |    |     |    |         |    |    |     |    |    |    |    |    |     |    |
| Motor Mounting                      | :                   | Flange                           |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |     |                           |    |                     |    |         |             |  |  |  |  |         |  |    |     |     |     |    |    |    |    |     |             |        |    |    |    |     |    |    |    |    |     |    |         |    |    |     |    |    |    |    |    |     |    |
| Electrical Supply                   | :                   | 380-420 Volts 50 Hz 3 Phase      |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |     |                           |    |                     |    |         |             |  |  |  |  |         |  |    |     |     |     |    |    |    |    |     |             |        |    |    |    |     |    |    |    |    |     |    |         |    |    |     |    |    |    |    |    |     |    |
| Start Type                          | :                   | Enquire                          |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |     |                           |    |                     |    |         |             |  |  |  |  |         |  |    |     |     |     |    |    |    |    |     |             |        |    |    |    |     |    |    |    |    |     |    |         |    |    |     |    |    |    |    |    |     |    |
| Motor Winding                       | :                   | Standard                         | <table><tr><th rowspan="2"></th><th colspan="8">Sound Spectrum (Hz)</th><th colspan="2">Overall</th></tr><tr><th>63</th><th>125</th><th>250</th><th>500</th><th>1k</th><th>2k</th><th>4k</th><th>8k</th><th>Lw*</th><th>LpA @ 3 m**</th></tr><tr><td>Inlet*</td><td>94</td><td>90</td><td>99</td><td>100</td><td>95</td><td>96</td><td>91</td><td>87</td><td>105</td><td>81</td></tr><tr><td>Outlet*</td><td>91</td><td>93</td><td>101</td><td>96</td><td>96</td><td>97</td><td>92</td><td>88</td><td>105</td><td>81</td></tr></table>          |     |                           |    | Sound Spectrum (Hz) |    |         |             |  |  |  |  | Overall |  | 63 | 125 | 250 | 500 | 1k | 2k | 4k | 8k | Lw* | LpA @ 3 m** | Inlet* | 94 | 90 | 99 | 100 | 95 | 96 | 91 | 87 | 105 | 81 | Outlet* | 91 | 93 | 101 | 96 | 96 | 97 | 92 | 88 | 105 | 81 |
|                                     | Sound Spectrum (Hz) |                                  |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |     |                           |    |                     |    | Overall |             |  |  |  |  |         |  |    |     |     |     |    |    |    |    |     |             |        |    |    |    |     |    |    |    |    |     |    |         |    |    |     |    |    |    |    |    |     |    |
|                                     | 63                  | 125                              | 250                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             | 500 | 1k                        | 2k | 4k                  | 8k | Lw*     | LpA @ 3 m** |  |  |  |  |         |  |    |     |     |     |    |    |    |    |     |             |        |    |    |    |     |    |    |    |    |     |    |         |    |    |     |    |    |    |    |    |     |    |
| Inlet*                              | 94                  | 90                               | 99                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              | 100 | 95                        | 96 | 91                  | 87 | 105     | 81          |  |  |  |  |         |  |    |     |     |     |    |    |    |    |     |             |        |    |    |    |     |    |    |    |    |     |    |         |    |    |     |    |    |    |    |    |     |    |
| Outlet*                             | 91                  | 93                               | 101                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             | 96  | 96                        | 97 | 92                  | 88 | 105     | 81          |  |  |  |  |         |  |    |     |     |     |    |    |    |    |     |             |        |    |    |    |     |    |    |    |    |     |    |         |    |    |     |    |    |    |    |    |     |    |
| Enclosure                           | :                   | Bifurcated TEFC                  |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |     |                           |    |                     |    |         |             |  |  |  |  |         |  |    |     |     |     |    |    |    |    |     |             |        |    |    |    |     |    |    |    |    |     |    |         |    |    |     |    |    |    |    |    |     |    |
| ErP [FMEG] Rating                   | :                   | Not in Scope                     |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |     |                           |    |                     |    |         |             |  |  |  |  |         |  |    |     |     |     |    |    |    |    |     |             |        |    |    |    |     |    |    |    |    |     |    |         |    |    |     |    |    |    |    |    |     |    |
| SFP value                           | :                   | 1.22 W/(l/s) @ Requested Duty    |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |     |                           |    |                     |    |         |             |  |  |  |  |         |  |    |     |     |     |    |    |    |    |     |             |        |    |    |    |     |    |    |    |    |     |    |         |    |    |     |    |    |    |    |    |     |    |
| Power from mains                    | :                   | 3.72 kW                          |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |     |                           |    |                     |    |         |             |  |  |  |  |         |  |    |     |     |     |    |    |    |    |     |             |        |    |    |    |     |    |    |    |    |     |    |         |    |    |     |    |    |    |    |    |     |    |
| Energy Consumption                  | :                   | 11150 kWh (3000 h/year)          |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |     |                           |    |                     |    |         |             |  |  |  |  |         |  |    |     |     |     |    |    |    |    |     |             |        |    |    |    |     |    |    |    |    |     |    |         |    |    |     |    |    |    |    |    |     |    |
| Running Cost / Year                 | :                   | £1338                            |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |     |                           |    |                     |    |         |             |  |  |  |  |         |  |    |     |     |     |    |    |    |    |     |             |        |    |    |    |     |    |    |    |    |     |    |         |    |    |     |    |    |    |    |    |     |    |
| Air Density                         | :                   | 1.2 kg/m³ / 20 °C / 0 m / 50% RH |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |     |                           |    |                     |    |         |             |  |  |  |  |         |  |    |     |     |     |    |    |    |    |     |             |        |    |    |    |     |    |    |    |    |     |    |         |    |    |     |    |    |    |    |    |     |    |
| Smoke Venting                       | :                   | Non Smoke Venting                |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |     |                           |    |                     |    |         |             |  |  |  |  |         |  |    |     |     |     |    |    |    |    |     |             |        |    |    |    |     |    |    |    |    |     |    |         |    |    |     |    |    |    |    |    |     |    |
| Product Number                      | :                   | JN275011                         |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |     |                           |    |                     |    |         |             |  |  |  |  |         |  |    |     |     |     |    |    |    |    |     |             |        |    |    |    |     |    |    |    |    |     |    |         |    |    |     |    |    |    |    |    |     |    |

| Description                                                       | Qty |
|-------------------------------------------------------------------|-----|
| <b>Fan</b><br>JN275011 - 50JM.BIF/20/2/6/22<br><b>Accessories</b> | 1   |

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Email: jon@nfan.co.uk  
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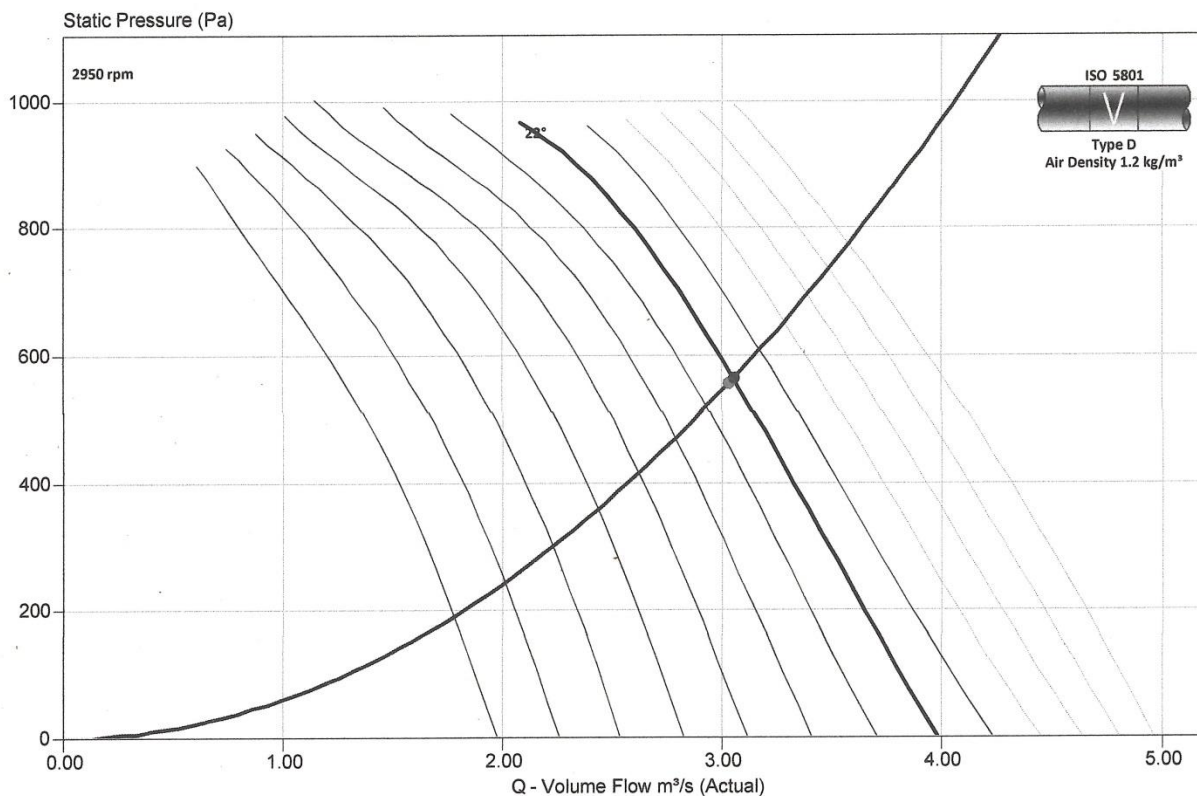
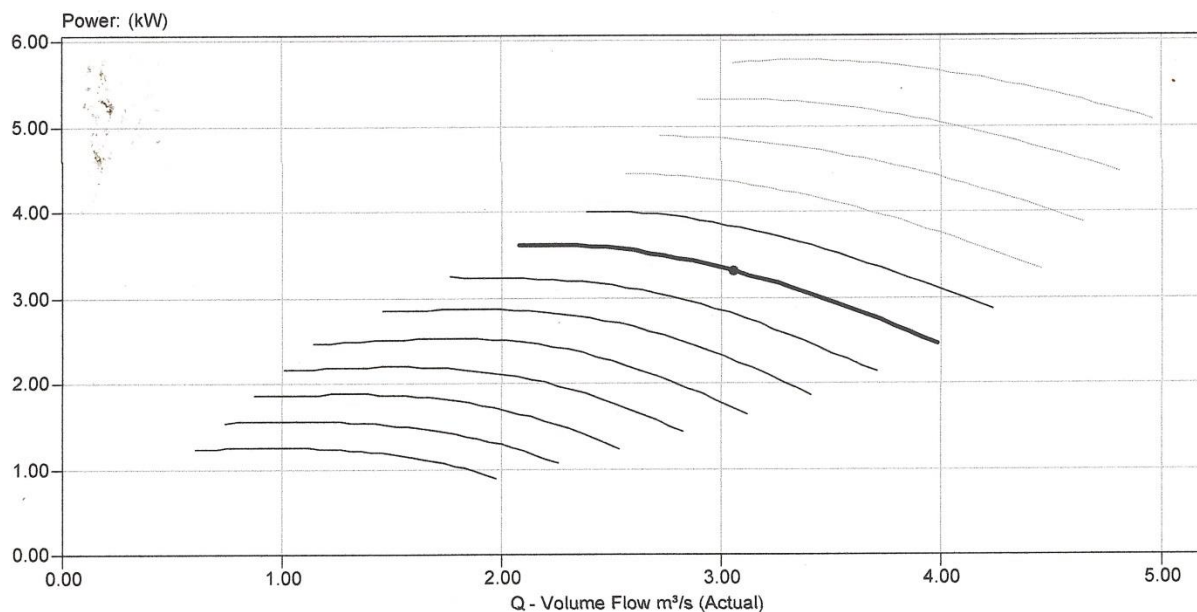


**Northern Fan Supplies Ltd**  
Performance Chart  
JM Bifurcated 200 Deg C



Quotation Number :  
Project Name : Crosskeys - revision  
Item Reference: : Extract Option 2

Project Code : BA-21396-2  
Customer : Mainland Catering  
Date: : Tuesday, October 12, 2021  
Fan Code : 50JM.BIF/20/2/6/22

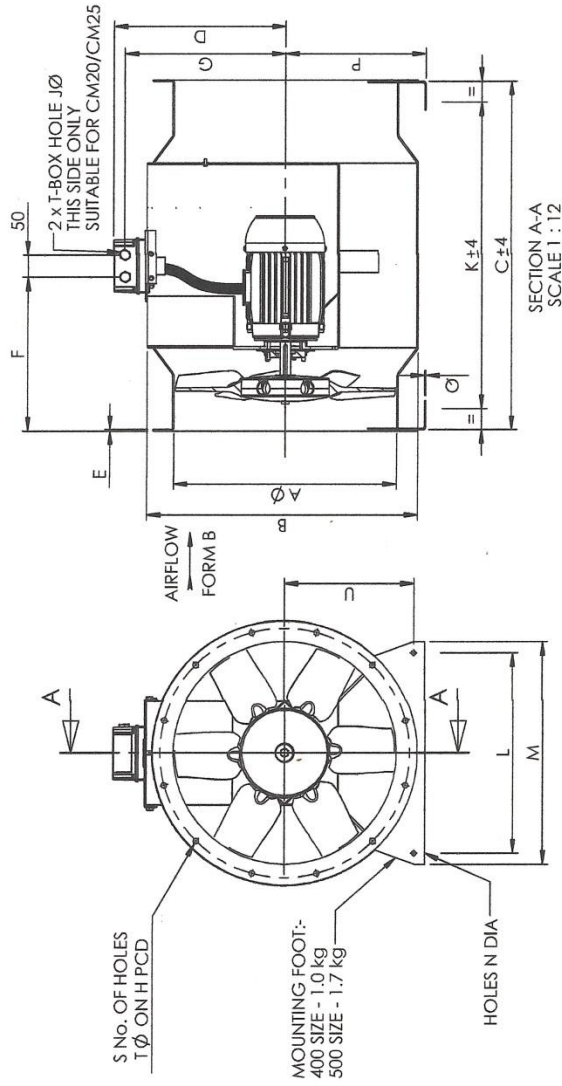




**Northern Fan Supplies Ltd**  
Drawing and Dimensions  
JM Bifurcated 200 Deg C



|                  |   |                      |                                 |
|------------------|---|----------------------|---------------------------------|
| Quotation Number | : | 50JM.BIF/20/2/6/22   | Fan Code                        |
| Project Name     | : | Crosskeys - revision | Customer                        |
| Item Reference:  | : | Extract Option 2     | Date: Tuesday, October 12, 2021 |



|             |     |
|-------------|-----|
| A           | 500 |
| B           | 610 |
| C           | 787 |
| D           | 383 |
| E           | 3   |
| F           | 347 |
| G           | 361 |
| H           | 560 |
| J           | 20  |
| K           | 691 |
| L           | 450 |
| M           | 500 |
| N           | 10  |
| P           | 315 |
| Q           | 3   |
| S           | 12  |
| T           | 12  |
| U           | 290 |
| Weight (kg) | 76  |

Notes : Dimensions shown in mm / Weight in kg

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

Reference :805743

Unit E1 Logford Trading Estate

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Selection Engine: 3.1.3.48p



|                                     |                                  |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |
|-------------------------------------|----------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Fan Code                            | 56JM/20/4/6/30                   | 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. |
| Fan Diameter / Size                 | 560 Size / mm                    |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |
| Blades                              | 6                                |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |
| Fan Speed                           | 1420 rpm                         |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |
| Velocity                            | 10.6 m/s                         |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |
| Blade Angle                         | 30°                              |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |
| Installation Type / Form of Running | C / B (Horizontal)               |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |
| Fan Casing                          | Long                             |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |
| Requested Duty                      | 2.58m³/s @ 191 Pa (static)       | Acoustic data has been derived from tests carried out in a Flakt Woods laboratory, in accordance with BS 848 Pt 2, 1985 / ISO 5136 under Ducted conditions. The LpA figure provided is the overall Inlet sound pressure level calculated at the specified distance, under spherical, free field conditions. Breakout levels stated are estimated from induct sound power levels and are provided for guidance.                                                                                                                                   |
| Outlet Dynamic Pressure             | 67 Pa                            | Acoustic figures for adjusted running speeds have been interpolated and are for reference only.                                                                                                                                                                                                                                                                                                                                                                                                                                                  |
| Duty Shaft Power                    | 0.951 kW                         |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |
| Max Shaft Power                     | 0.978 kW                         |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |
| Total Efficiency                    | 72.0 %                           |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |
| Motor Frame                         | CT9 [ Class F ]                  | This Offer is made subject to the latest version of our A100-19 Terms and Conditions, a copy of which can be made available on request.                                                                                                                                                                                                                                                                                                                                                                                                          |
| Motor Rating                        | 0.970 kW                         |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |
| Full Load Current                   | 6.9 A                            |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |
| Starting Current                    | 13.5 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 40 (ErP Compliant)             |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |
| ErP [FMEG] Target                   | N 40                             |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |
| FMEG Blade Angle [Range]            | 30° [ 26° - 30° ]                |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |
| Measurement Category                | C (Static)                       |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |
| VSD                                 | N                                |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |
| Fan + Motor Efficiency              | 34.9% (2.3 m³/s @ 233 Pa)        |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |
| Motor Input Power (ErP)             | 1.53 kW                          |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |
| SFP value                           | 0.59 W/(l/s) @ Requested Duty    |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |
| Power from mains                    | 1.53 kW                          |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |
| Energy Consumption                  | 4579 kWh (3000 h/year)           |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |
| Running Cost / Year                 | £549                             |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |
| Air Density                         | 1.2 kg/m³ / 20 °C / 0 m / 50% RH |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |
| Smoke Venting                       | Non Smoke Venting                |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |
| Product Number                      | DX571459                         |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |

|           | Sound Spectrum (Hz) |     |     |     |    |    |    |    | Overall |             |
|-----------|---------------------|-----|-----|-----|----|----|----|----|---------|-------------|
|           | 63                  | 125 | 250 | 500 | 1k | 2k | 4k | 8k | Lw*     | LpA @ 3 m** |
| Inlet*    | 81                  | 82  | 78  | 77  | 75 | 71 | 68 | 63 | 86      | 59          |
| Outlet*   | 83                  | 84  | 78  | 77  | 75 | 72 | 69 | 64 | 87      | 59          |
| Breakout* | 83                  | 84  | 78  | 77  | 75 | 72 | 69 | 64 | 87      | 59          |

\* Lw dB re 10<sup>-12</sup> W  
 \*\* dBA re 2x10<sup>-5</sup> Pa

Sound data at requested duty.

|                                   |                                                           |
|-----------------------------------|-----------------------------------------------------------|
| Unit E1 Logford Trading Estate    | Website: <a href="http://nfan.co.uk">nfan.co.uk</a>       |
| Thomas Street, Stretford, M320JT  | Email: <a href="mailto:jon@nfan.co.uk">jon@nfan.co.uk</a> |
| Tel: 01618641777 Fax: 01618642777 | Copyright Fläkt Group 2003 - 2020                         |
| Printed on 12 October 2021        | Page 7 of 9                                               |
|                                   | Selection Engine: 3.1.3.48p                               |

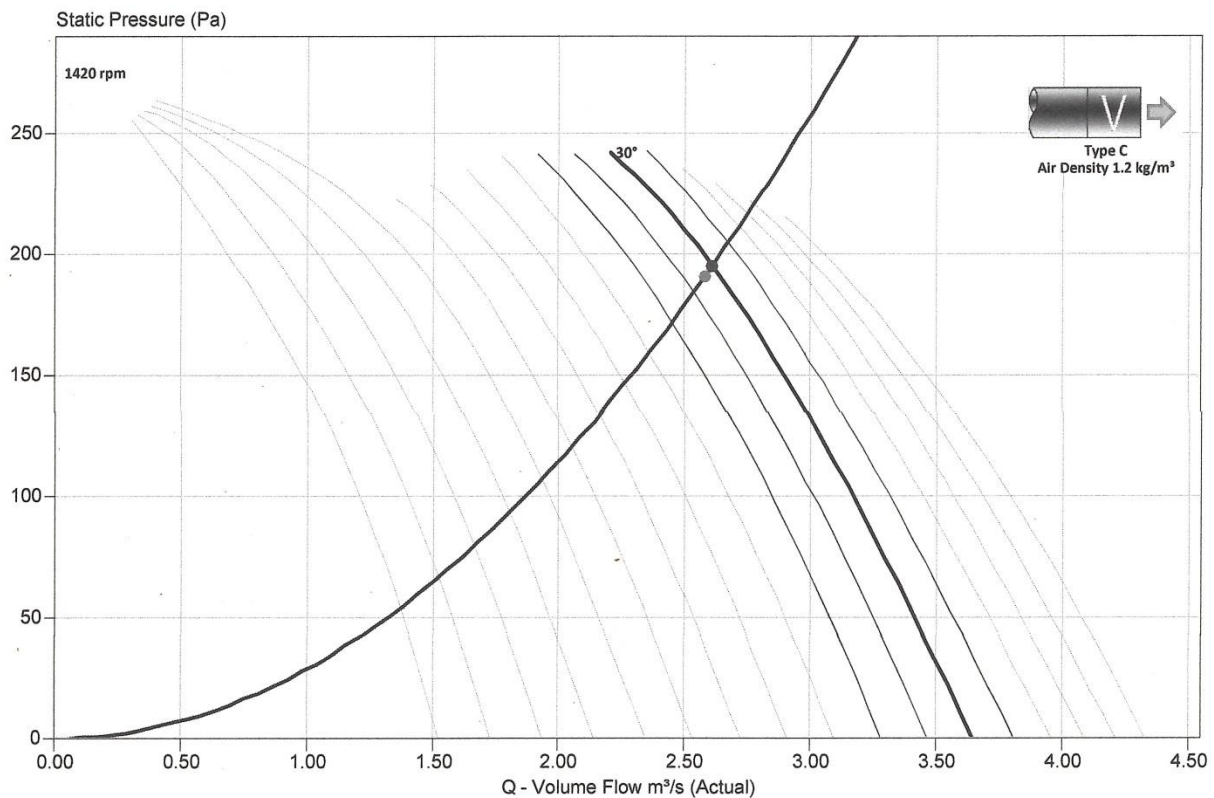
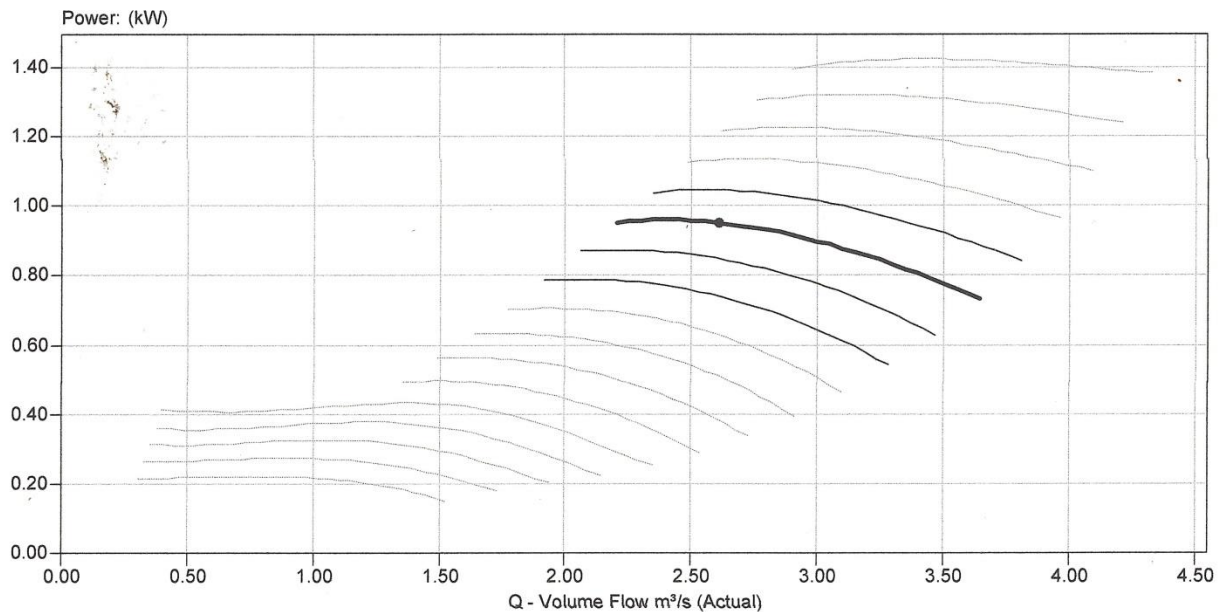


**Northern Fan Supplies Ltd**  
Performance Chart  
JM Aerofoil



Quotation Number :  
Project Name : Crosskeys - revision  
Item Reference : Supply

Project Code : BA-21396-3  
Customer : Mainland Catering  
Date : Tuesday, October 12, 2021  
Fan Code : 56JM/20/4/6/30





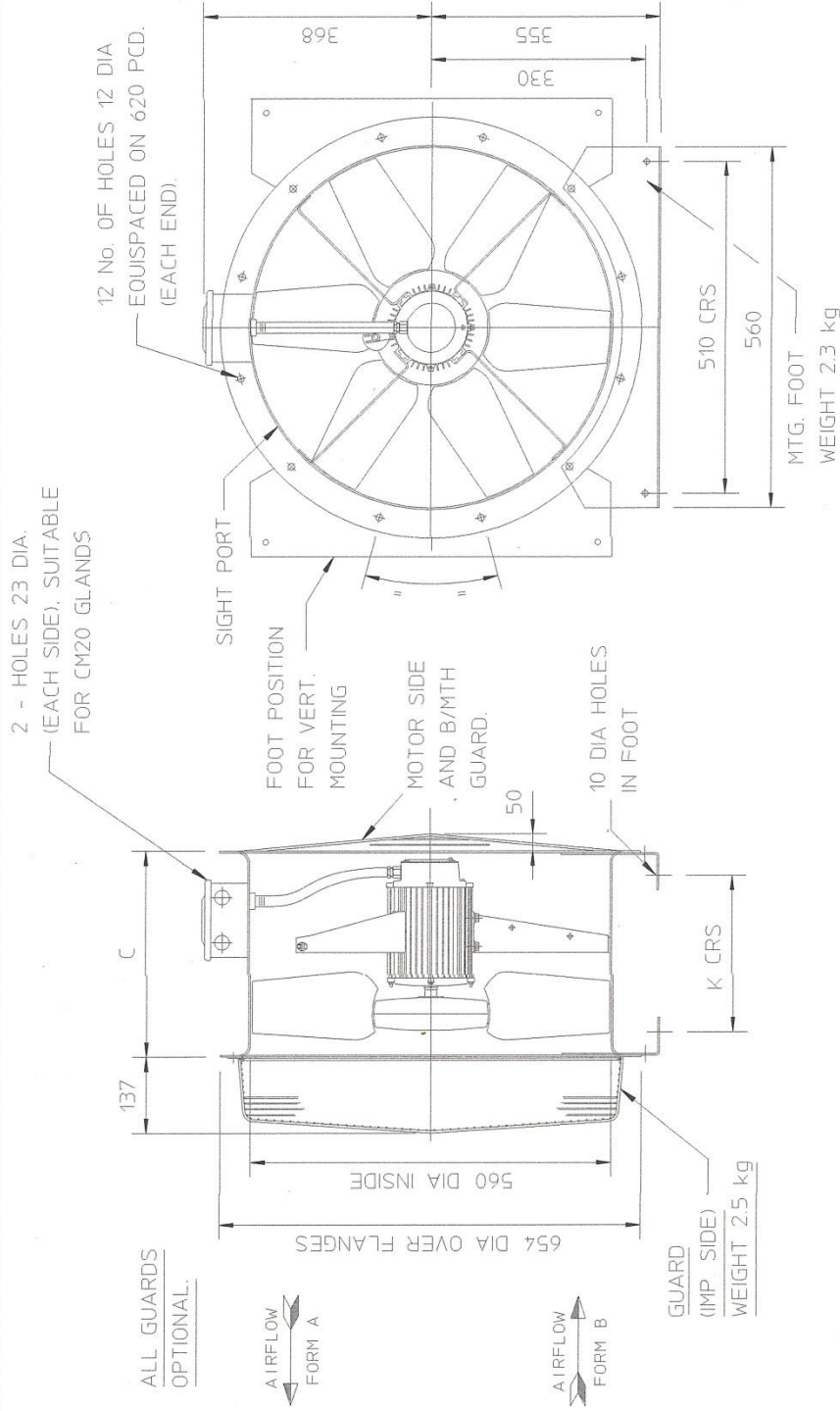
**Northern Fan Supplies Ltd**  
Drawing and Dimensions  
JM Aerofoil



Quotation Number :  
Project Name : Crosskeys - revision  
Item Reference: : Supply

Fan Code : 56JM/20/4/6/30  
Customer : MainlandCatering  
Date: : Tuesday, October 12, 2021

C 375  
K 289  
Weight (kg) 38



Notes : Dimensions shown in mm / Weight in kg

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

Reference: D248975

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Selection Engine: 3.1.3.48p



## Filters

### SOLID FUEL VERITECH FILTER

The Solid Fuel Veritech filter has specifically been designed in order to meet the new DW/172 standards for solid fuel appliances.

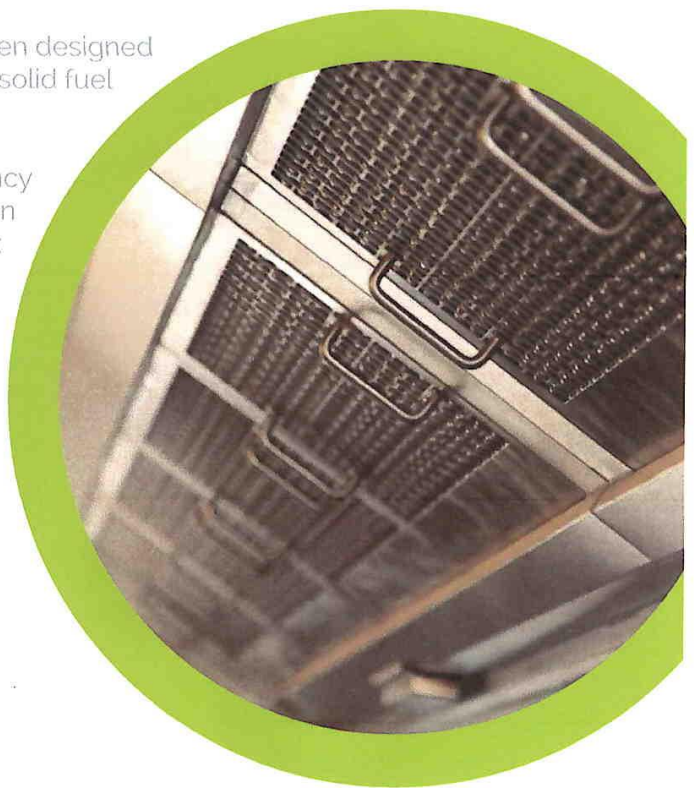
The twin micron filter is the ultimate high efficiency primary grease separator filter for your kitchen with the added protection of a built in spark arrestor.

The filters are proven to remove 94.6% of grease before it enters the extraction system and now also ensure that no burning embers or sparks are able to pass through the filters in to the extraction system\*.

The filters are available in all standard sizes and specials on request.

**Benefits include:**

- Spark Arrestor filter
- High efficiency grease separator filter
- Full Stainless steel construction
- Reduces duct cleaning requirements
- Exceptional fire barrier
- Reduce insurance premiums
- Grease capture 94.6%
- Assists TR19 compliance
- Return on investment is as short as 12 months
- UL 1046 & UDL2052 accredited



Tel: 0845 643 6728  
Email: [sales@ocinnovations.co.uk](mailto:sales@ocinnovations.co.uk)  
Website: [www.ocinnovations.co.uk](http://www.ocinnovations.co.uk)

## SOLID FUEL VERITECH FILTER

### Specification:

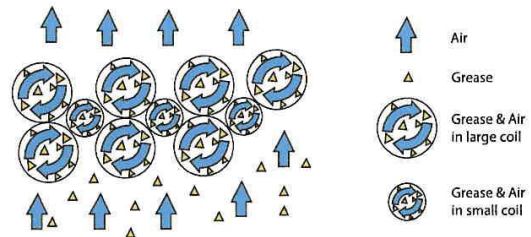
- Volume Flow Rate (m<sup>3</sup>/s): up to 0.56 per filter
- Face Velocity (m/s): 4.2 (optimal)
- Pressure Drop (pa): 110
- Weight (kg): up to 3kg
- Material: Stainless Steel
- Noise (dB): 50

### How does it work?

The patented Veritech filter Matrix was designed to apply the four main principles of filtration, namely:

- Spark/Ember Arrestor
- Condensation
- Inertial separation
- Impingement
- Settling

See Diagram - >



1. Air and Grease go into the Veritech filter
2. Air and Grease circulate around the coils within the filter
3. 94.9% of Grease is trapped and collected in the drip tray
4. Cleansed air comes out of the back and the Veritech filter

\* Note that there is no UK test standard for spark arresting and the addition of the secondary spark arrestor has been extensively tested internally



## FIRE RATED DUCTWORK & COMPONENTS SCHEME

***Certificate number: FRD600a***

This is a product certificate to certify that

### ***Firemac Ltd***

11 Abbey Road  
North Berwick  
East Lothian EH39 4BS  
Telephone no. +44 (0) 16 2089 2202

Who manufacture the following product

### **Firemac FM Fabric for Use in Firemac FM Fire Duct Systems**

have satisfied the requirements of the SDP 26-1 Fire Resisting Ducts (including Smoke Extraction) & Components scheme Appendix D. This includes the testing of products to **BS476: Part 24 (ISO 6944: 1985)**, the inspection of their Factory Production Control and continuing surveillance audits and testing of samples of products taken from production. The product specification and field of application to achieve up to **2 hrs (insulated) and 4 hrs (uninsulated) to BS 476: Part 24** are detailed in the schedules referenced below.



Schedules ref: FRD600/S08, S09, S10,  
S11, S12, S13, S14, S15 & S16  
First Issued: 20 January 2012  
Revised: 30 August 2017  
Valid to: 19 January 2021  
Issue No: 2

Ian Woodhouse  
Director of Certification



175

IFC Certification Ltd, 20 Park Street, Princes Risborough, Buckinghamshire. UK, HP27 9AH  
Tel: +44 (0)1844 275500 Fax: +44(0)1844 274002 E-mail: [info@ifccertification.com](mailto:info@ifccertification.com) Web: [www.ifccertification.com](http://www.ifccertification.com)  
Registered No: 4777898 England

The certificate and schedule are held in force by regular annual surveillance visits by IFC Certification and the reader or user should contact IFC Certification to validate its status. This certificate remains the property of IFC Certification and must be returned to them on demand.

Firemac FM Fabric PSA



1.55m or 1.3m x 50m roll

Firemac FM Butyl Tape



15mm x 3mm  
sold in boxes of 20 rolls 15m long

## Firemac FM Intumescent Acrylic Sealant



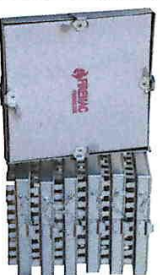
310ml cartridges sold in boxes of 25 (grey)

## Firemac FM Silicone Sealant \*



310ml cartridges sold in boxes of 12 (grey) \*Advised for use in Kitchen Extract systems

## Firemac FM Access Panel (all dimensions in mm)

|                                                                                   |           |           |           |           |
|-----------------------------------------------------------------------------------|-----------|-----------|-----------|-----------|
|  | 100 x 100 | 300 x 300 | 450 x 200 | 550 x 350 |
|                                                                                   | 150 x 150 | 350 x 300 | 450 x 250 | 600 x 125 |
|                                                                                   | 200 x 150 | 350 x 350 | 450 x 300 | 600 x 200 |
|                                                                                   | 200 x 200 | 400 x 200 | 450 x 350 | 600 x 300 |
|                                                                                   | 250 x 175 | 400 x 250 | 450 x 450 | 600 x 400 |
|                                                                                   | 250 x 250 | 400 x 300 | 500 x 250 | 600 x 350 |
|                                                                                   | 300 x 150 | 400 x 350 | 500 x 300 | 600 x 600 |
|                                                                                   | 300 x 200 | 400 x 400 | 500 x 500 |           |

Firemac FM Fire Duct systems generally require access panels for cleaning and access to ancillary items e.g. dampers.



## Firemac FM Fire Duct Installation Leaflet

This is a life safety system and so great care must be taken to ensure the system is installed with good workmanship, fully in accordance with Firemac's installation instructions.

This document provides the fundamental information to correctly install Firemac FM Fire Ducts. However, it is not comprehensive and so the user must also refer to the current Firemac Technical Manual and/or consult Firemac.

For all enquiries, please contact Firemac:

Tel: +44(0)1620 860084

Email: [sales@firemac.com](mailto:sales@firemac.com)

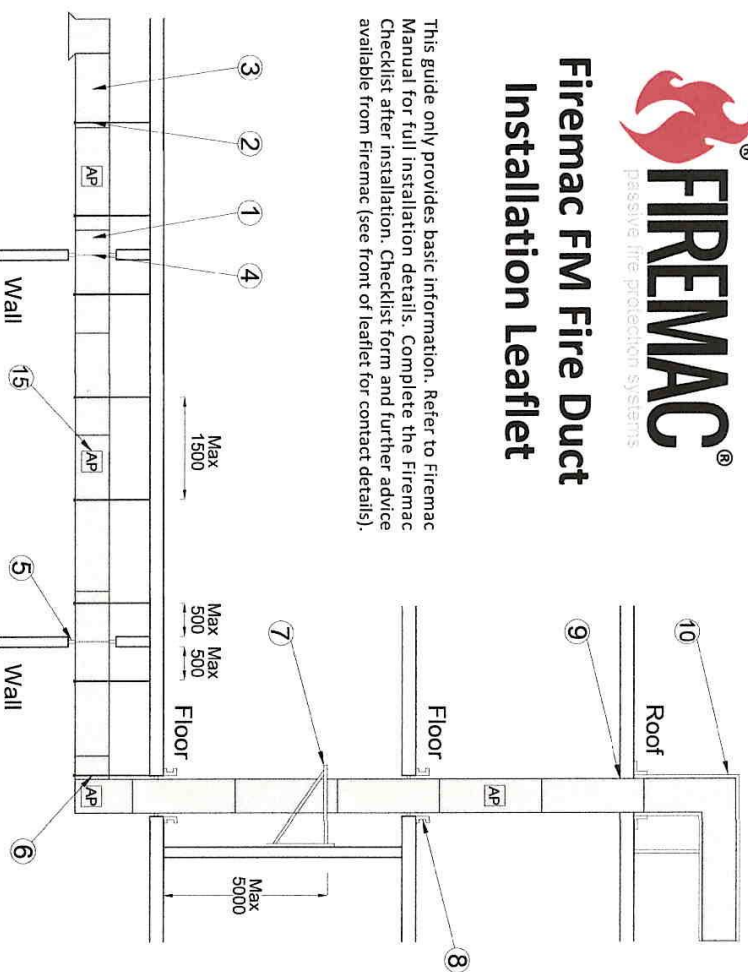
Address: Firemac Distribution Centre, Unit B,

Pitcox, East Lothian, EH42 1RQ

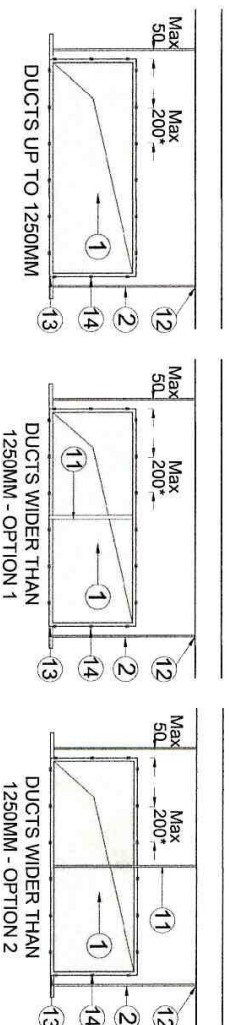


## Firemac FM Fire Duct Installation Leaflet

This guide only provides basic information. Refer to Firemac Manual for full installation details. Complete the Firemac Checklist after installation. Checklist form and further advice available from Firemac (see front of leaflet for contact details).



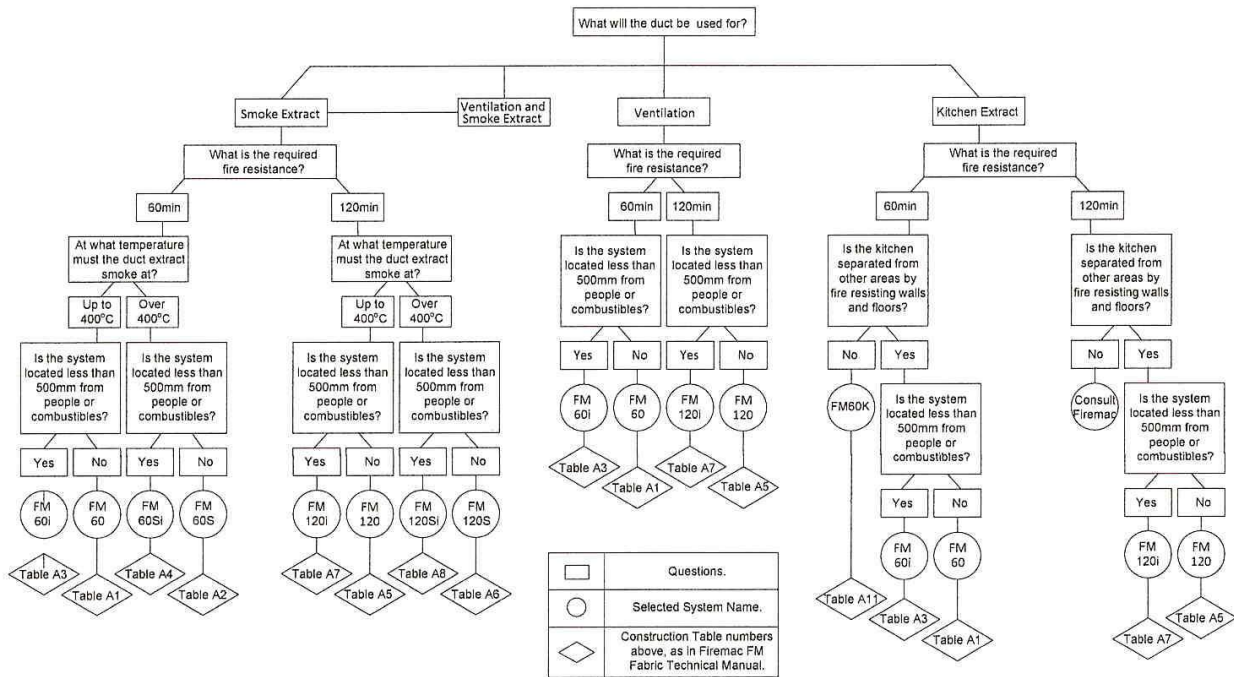
### Horizontal Duct Supports



\*Max 150mm for kitchen extract.

Check all duct sections comply with order and are cleaned inside.

1. Firemac FM Fire Duct Section, pre-wrapped with Firemac FM Fabric and fitted with flanges, and stiffeners if required.
2. Threaded rod hangers normally M10 minimum. For bearers, see no. 13. Check sizes in Technical Manual. Horizontal ducts suspended at 1.5m centres max. Hangers must be located no more than 500mm from both sides of fire walls and 50mm from side of duct. The duct must then be supported independently from other services.
3. If kitchen extract then usually the ductwork in the kitchen compartment is only coated up to the first set of hangers with the remaining duct uncoated.
4. Insert internal ties at max 500mm centres at wall penetrations for horizontal ducts wider than 500mm.
5. Provide the client with fire stopping details from the Technical Manual.
6. Support ducts at all changes in direction.
7. Provide extra support for vertical ducts if necessary so that there is support at max 5000mm centres.
8. Support vertical ducts at all floor levels.
9. Insert rock mineral wool insulation and/or plasterboard if duct close to combustible foam insulation or timber, at roof penetrations.
10. Protect external ducts from the weather using steel or aluminium sheeting.
11. Option 1 - For ducts wider than 1250mm, add intermediate internal ties at max 1m centres across the width of the duct and increase size of external hangers. Option 2 - Alternatively, add intermediate hangers at max 1m centres across the width of the duct.
12. Use fire rated anchors in accordance with manufacturers instructions.
13. Bearers normally min. 41 x 41 x 2.5mm Unistrut or similar except for ducts wider than 1250mm supported as option 1. For this option, larger bearers may be necessary. Consult with Firemac for bearer size.
14. Firemac FM Butyl Tape to be used between all flange joints, and all corner joints to be sealed using Firemac FM Intumescent Acrylic Sealant (Firemac FM Silicone Sealant for Kitchen Extract). Ensure the ends of flange sections are sealed. Flange clamps at max 200mm centres (150mm for kitchen extract).
15. Firemac access panels to be fitted in accordance with the project specification, TR19 and DW/144 or for kitchen extract follow the guidance given in TR19 and DW/172.



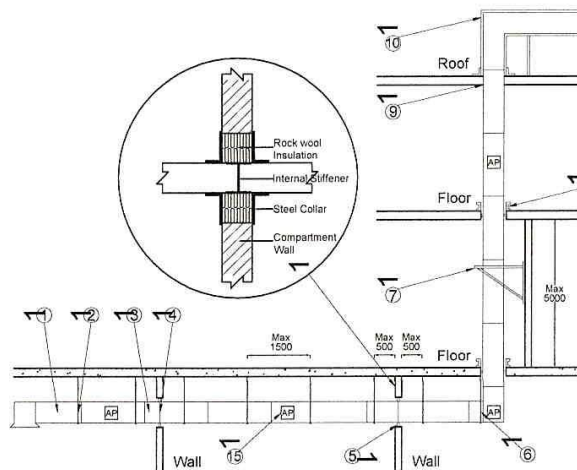
**Firemac FM Access Panel**

|           |           |           |           |
|-----------|-----------|-----------|-----------|
| 300 x 100 | 300 x 300 | 450 x 200 | 550 x 350 |
| 150 x 150 | 350 x 300 | 450 x 250 | 600 x 125 |
| 200 x 150 | 350 x 350 | 450 x 300 | 600 x 200 |
| 200 x 200 | 400 x 200 | 450 x 350 | 600 x 300 |
| 250 x 175 | 400 x 250 | 450 x 450 | 600 x 400 |
| 250 x 250 | 400 x 300 | 500 x 250 | 600 x 350 |
| 300 x 150 | 400 x 350 | 500 x 300 | 600 x 600 |
| 300 x 200 | 400 x 400 | 500 x 500 |           |

Firemac FM Fire Duct systems generally require access panels for cleaning and access to ancillary items e.g. dampers.

Check all duct sections comply with order and are cleaned inside.

- Firemac FM Fire Duct Section, pre-wrapped with Firemac FM Fabric and fitted with flanges, and stiffeners if required.
- Threaded rod hangers normally M10 minimum. Check size in Technical Manual. Horizontal ducts suspended at 1.5m centres. Hangers must be located no more than 500mm from both sides of fire walls and 50mm from side of duct.
- Normally clad duct up to first set of hangers in a kitchen.
- Insert internal ties at max 500mm centres at wall penetrations for horizontal ducts wider than 500mm.
- Provide the client with fire stopping details from the Technical Manual.
- Support ducts at all vertical and horizontal bends.
- Provide extra support for vertical ducts if necessary so that there is support at max 5000mm centres.
- Support vertical ducts at all floor levels.
- Insert rock mineral wool insulation and/or plaster board if duct close to combustible foam insulation or timber, at roof penetrations.
- Protect external ducts from the weather using steel or aluminium sheeting.



## Firemac FM Duct System

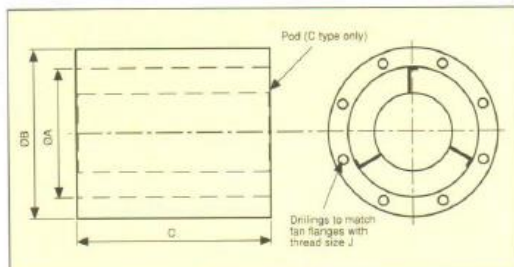
Firemac Distribution Centre, Unit B, Pitcox, East Lothian, EH42 1RQ

Tel: 00 44 (0)1620 860084 / Email: sales@firemac.com / www.firemac.com

## Silencer specification

# ANCILLARIES

### SILENCER



The above silencers give the following approximate dB(A) reductions:-

B Type 1 diameter length - 7 to 10 dB(A)

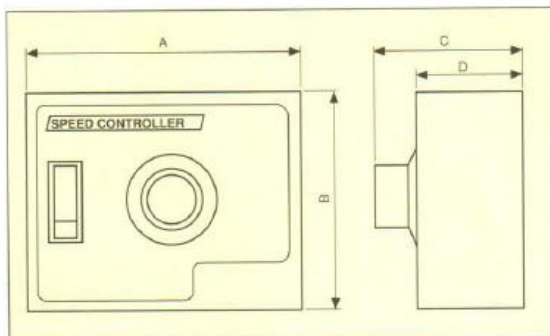
C Type 1 diameter length - 12 to 15 dB(A)

For full acoustic details see publication AF1.3/C

| Suitable for fan ØA | B   | C   | J   | Weight (kg) |        |
|---------------------|-----|-----|-----|-------------|--------|
|                     |     |     |     | B type      | C type |
| 152                 | 210 | 229 | M6  | 2.7         | -      |
| 191                 | 248 | 286 | M6  | 3.6         | -      |
| 241                 | 298 | 362 | M8  | 5.0         | -      |
| 280                 | 385 | 280 | M8  | 9.0         | -      |
| 305                 | 416 | 305 | M8  | 10          | 12     |
| 315                 | 415 | 315 | M8  | 10          | 13     |
| 355                 | 455 | 355 | M8  | 12          | 15     |
| 381                 | 492 | 381 | M10 | 13          | 16     |
| 400                 | 500 | 400 | M10 | 15          | 18     |
| 450                 | 600 | 450 | M10 | 20          | 24     |
| 483                 | 645 | 483 | M12 | 24          | 28     |

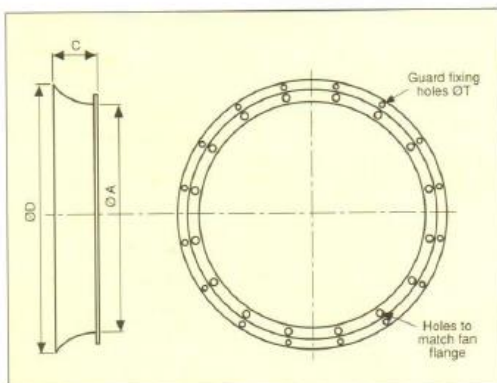
| Suitable for fan ØA | B    | C    | J   | Weight (kg) |        |
|---------------------|------|------|-----|-------------|--------|
|                     |      |      |     | B type      | C type |
| 500                 | 650  | 500  | M10 | 25          | 29     |
| 560                 | 710  | 560  | M10 | 30          | 35     |
| 610                 | 773  | 610  | M12 | 34          | 39     |
| 630                 | 780  | 630  | M10 | 35          | 42     |
| 710                 | 860  | 710  | M10 | 44          | 53     |
| 762                 | 926  | 762  | M12 | 51          | 60     |
| 800                 | 1000 | 800  | M10 | 55          | 66     |
| 900                 | 1100 | 900  | M12 | 70          | 84     |
| 1000                | 1200 | 1000 | M12 | 82          | 100    |
| 1120                | 1320 | 1120 | M12 | 100         | 118    |
| 1250                | 1450 | 1219 | M12 | 127         | 147    |

### SPEED CONTROLLER



| Type    | A   | B   | C   | D   |
|---------|-----|-----|-----|-----|
| ME1.1   | 104 | 83  | 55  | 40  |
| ME1.3   | 148 | 87  | 62  | 47  |
| ME1.6   | 148 | 87  | 62  | 47  |
| MT1.1   | 124 | 124 | 60  | 52  |
| MT1.2   | 160 | 270 | 196 | 161 |
| MT1.5   | 160 | 270 | 196 | 161 |
| MT1.8   | 160 | 270 | 196 | 161 |
| MT3.0-5 | 160 | 270 | 196 | 161 |
| MT3.1   | 160 | 270 | 196 | 161 |
| MT3.2   | 160 | 270 | 196 | 161 |

### BELL MOUTH INLET (fan with flanged inlet only)



| Suitable for fan ØA | C   | D    | T  | Weight (kg) |
|---------------------|-----|------|----|-------------|
| 315                 | 55  | 379  | 10 | 1.0         |
| 355                 | 62  | 423  | 10 | 1.2         |
| 381                 | 70  | 457  | 10 | 1.5         |
| 400                 | 70  | 480  | 12 | 1.5         |
| 450                 | 79  | 536  | 12 | 2.0         |
| 483                 | 87  | 579  | 10 | 3.0         |
| 500                 | 87  | 601  | 12 | 3.2         |
| 560                 | 97  | 668  | 12 | 4.0         |
| 610                 | 108 | 732  | 10 | 5.0         |
| 630                 | 108 | 757  | 12 | 4.8         |
| 710                 | 126 | 857  | 12 | 5.4         |
| 762                 | 133 | 915  | 10 | 7.0         |
| 800                 | 134 | 957  | 12 | 6.8         |
| 900                 | 150 | 1077 | 15 | 8.0         |
| 1000                | 167 | 1199 | 15 | 17.8        |



All dimensions shown in millimetres