



**Design and Specification
For
Kitchen Ventilation System**

Client:

Blake Bentley

Address:

Bowstoke Road
Great Barr
Birmingham

REF:

AJS.SS.0203 REV 1

Caterlink Uk Ltd

Northgate Way, Aldridge, Walsall, WS9 8SR
01922 453168 www.caterlinkuk.co.uk

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1. Specification

Name: Blake Bentley
Address: Bowstoke Road, Gear Barr, Birmingham

Post Code: TBC
Our Ref: AJS.SS0203 REV1
Date: 3rd March 2021

Re: Proposed Ventilation for the above Project

We confirm the design and specification for the extraction system at the above address is designed in accordance with DW144 & DW172 specifications.

Kitchen Extraction Ventilation System.

Wall mounted Extraction Canopy

The Kitchen extract canopy is of an overhead wall canopy type construction and is manufactured from brushed 304 grade stainless steel outer skin and brushed 304 grade stainless steel inner skin. 50mm fully welded perimeter grease channel with front safety edge to aid cleaning.

Incorporated within the canopy is a full-length purpose-built filter housing to accommodate 7 off, 500mm (wide) x 500mm (high) x 50mm (deep) removable stainless steel baffle type grease filters with supply plenums either side complete with double deflection air grilles to provide make up air.

Stainless steel fully recessed fluorescent light fittings are incorporated between input and extract plenums to provide adequate lighting.

The Canopy size 2800mm (long) x 1200mm (wide) x 600mm (deep)

Ductwork.

The duct work would be manufactured from galvanized mild steel sheet of spiral construction in accordance with specifications DW144 and DW172.

The extract duct work will connect to the top of the canopy header and run horizontally to the end wall, pass through the wall at ceiling height and turn 90° upwards, passing through 1d silencer, fan motor, 1d silencer, ducting & will be mounted using anti vibration mounts, terminating at eaves height with low loss terminal.

Access doors for cleaning and maintenance to be positioned where practically possible.

Extract Fan Details.

Located externally in the rising stack, the extract fan shall be capable of handling a design volume of 2.5m³/s at a system resistance of 150pa. The fan shall be speed controllable. See attached data sheets.

Supply Fan Details.

Not required

Noise Control.

A 1D acoustic attenuator is to be installed directly before and after the extract fan to reduce internal & breakout noise, typically a 1D attenuator gives a noise reduction of 10dba at 3m from the fan.

Odour Control

Not requires as high-level discharge.

Fire Damper

No fire dampers to be installed.

2. Photos

- Typical Extract Canopy installation Photo's

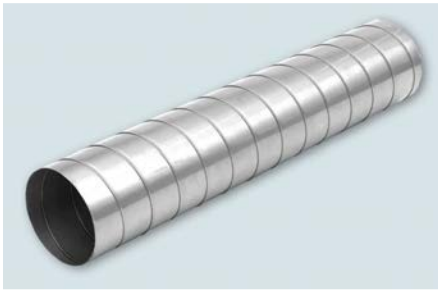


3. Fan Details

Extraction: 450 twin axial fan, anti vibration mounts, 2 x 1D silencers

- See Attached Fan Details with technical Information.

4. Ductwork Details



Ductwork will be manufactured from galvanized mild steel spiral, in accordance with DW144 standard specification and DW 172 for kitchen extract.

5. Noise Control Details

Circular Silencers Specification

Silencers are available in two standard lengths:-

- 1D (length = diameter)
- 2D (length = 2 x diameter)

Each length is then available with and without cylindrical centre-body or 'pod' which provides additional attenuation. These are identified by the inclusion in the product code 'P' for podded or 'NP' for unpodded versions.

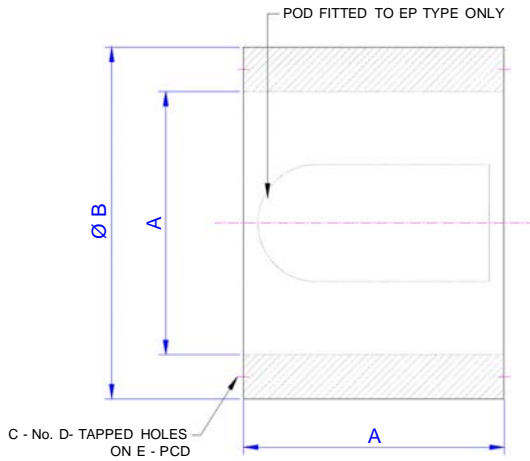
When selecting the appropriate silencer, account needs to be taken of both the level of sound reduction achieved and, in the case of a podded silencer, the additional pressure drop in the system which needs to be overcome by the fan.

For sound, deducting the appropriate 'dBA Attenuation' figure from the 'dBA @ 3m' figure in the relevant fan performance table gives a combined 'dBA @ 3m' figure for the fan and silencer combination.

For pressure, the ' ΔP ' figure should be added to the pre-attenuation pressure requirement before selecting the appropriate fan.

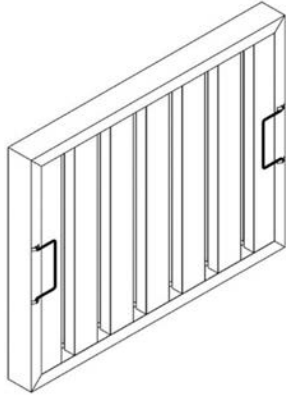
| Fan dia | A 1D | A 2D | B | C | D | E | WEIGHT (Kg) | | | |
|---------|------|------|-----|----|-----|-----|-------------|-------|--------|-------|
| | | | | | | | 1DENPM | 1DEPM | 2DENPM | 2DEPM |
| 450 | 450 | 900 | 602 | 8 | M10 | 500 | 15 | 18 | 27 | 31 |
| 500 | 500 | 1000 | 652 | 12 | M10 | 560 | 18 | 22 | 32 | 37 |
| 560 | 560 | 1120 | 712 | 12 | M10 | 620 | 22 | 26 | 39 | 46 |
| 630 | 630 | 1260 | 782 | 12 | M10 | 690 | 26 | 32 | 48 | 57 |

| Fan dia | dBA ATTENUATION | | ΔP (Pa) 1DEP | dBA ATTENUATION | | ΔP (Pa) 2DEP |
|---------|-----------------|------|----------------------|-----------------|------|----------------------|
| | 1DENP | 1DEP | | 2DENP | 2DEP | |
| 450 | -8 | -10 | 21 | -13 | -15 | 33 |
| 500 | -8 | -11 | 32 | -14 | -18 | 51 |
| 560 | -8 | -11 | 35 | -15 | -20 | 56 |
| 630 | -11 | -13 | 27 | -17 | -26 | 43 |



Casing made from galvanized steel, acoustically lined with high density mineral wool covered with cloth to prevent erosion. Acoustic lining retained by perforated steel sheet.

6. Baffle Filter Details



It is universally recognized that there is an increasing need to maintain & improve hygiene standards & reduce fire hazards within kitchens. The Baffle Grease filter accomplishes both needs through its clever design of interlocking baffles that provide a tortuous route for the passage of air through the filter by creating two rapid 180° air direction changes simultaneously. The grease molecules having a far greater inertial force than air impact themselves on the vanes. A series of vertical Stainless Steel vanes are housed in a channel frame, with each of the baffles strategically aligned to provide the highest potential for grease removal. Due to the smooth nature of the vanes the grease naturally runs downwards, through the drainage holes and into the collecting trays normally provided within the canopy holding casings.

Construction

The WFG Baffle filter range is available in Stainless Steel and is robustly constructed with filter removal handles fitted as standard.

Cleaning

It is imperative that this product is regularly cleaned – according to use. This may be accomplished by steam cleaning, washing in a dishwasher using conventional detergents or cleaners.

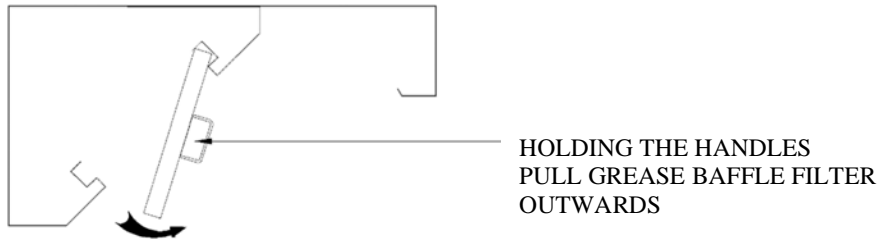
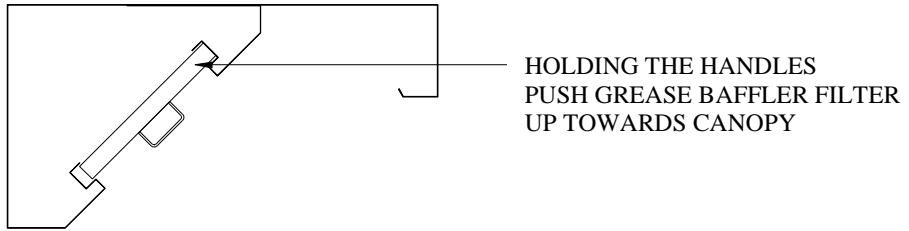
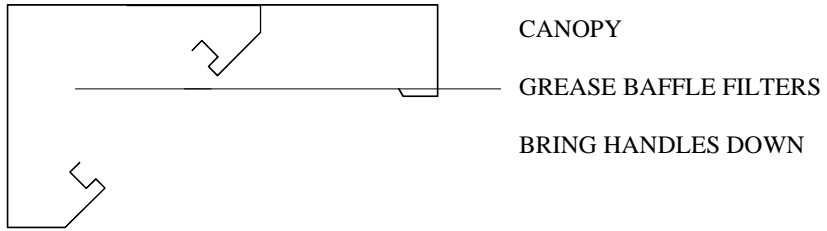
Range

Baffle filters are available in a large range of standard sizes, they can also be manufactured in non-standard sizes, however the filter depth is always limited to 47mm due to the nature of the filter.

| Nominal Size H x W x D | Actual Size H x W x D | Rated Capacity* | Resistance |
|---------------------------|--------------------------|------------------------|------------|
| 10 x 20 x 2" | 241 x 495 x 45mm | 500m ³ /hr | 120pa |
| 16 x 20 x 2" | 395 x 495 x 45mm | 830m ³ /hr | 124pa |
| 20 x 20 x 2" | 495 x 495 x 45mm | 1000m ³ /hr | 104pa |

***Note** Baffle filters may be used at higher rated capacities whilst retaining their efficiency, however it should be noted that this will increase their resistance to air. Baffle filters must always be used with the baffles running vertically.

How to remove filters from canopy



7. Odour Control Details

Not required.

8. Caterlink UK Ltd Cleaning and Maintenance Details

Canopy and Filter Maintenance

- Grease filters to be cleaned daily by soaking in detergent overnight.
- Grease trap and condense channel must be cleaned daily.
- Canopy to have professional deep clean every 6 months to maintain warranty.

Pre-Filter Maintenance

- Pre filter(s) must be changed every four weeks
- Ridged bag filter(s) must be changed every eight weeks

General Cleaning

- Using a damp cloth with mild detergent diluted in water wipe all stainless steel services.
- Once dry using a mixture of 50% baby oil and 50% white spirits mixed together, applied to a non-abrasive cloth, lightly wipe down following the grain to maintain the stainless steel.

DO NOT USE ANY ABRASIVE MATERIAL TO CLEAN OR
CONCENTRATED CHEMICALS i.e. mild steel wire wool cleaners

9. Data Sheets and Drawings

Extract

TURBOFLOW TF

Product Overview

- 5 standard sizes from 450mm to 630mm
- Air volume flow rates up to 4.6 m³/s
- Static pressures up to 764 Pa
- Suitable for operating temperatures up to +70°C
- Ideal for internal or external use
- Available in **AC**



The Turboflow TF is a two stage axial fan which has been specifically developed to tackle higher pressure requirements with a straightforward, efficient and definitive approach.

Easy Installation

Motors are wired via a weatherproofed cable to an IP55 protected terminal box mounted on the outside of the unit casing for ease of electrical connection.

Efficient Performance

High efficiency adjustable pitch aerofoil impellers are provided with blades made from high quality pressure die cast aluminium. Increased blade chord and twist provides 7% higher efficiency reducing overall energy consumption. The use of contra-rotating impellers allow operation at higher pressures within a smaller fan diameter.

Controllability

The Eitadrive range of inverters has been designed encompassing the latest technology and combining robustness with reliability. Using an inverter to control fans via sensors to reduce fan speed can provide significant cost-savings through lower energy consumption.

Long Life

The use of robust three phase motors, coupled with inverter soft starts, reduces wear and prolongs life.

Warranty

Each TF has a 12 month warranty.

Construction

Units have been constructed from a single sheet of steel, with both motors and axial impellers mounted within the length of the unit casing. All casing parts are heavy gauge mild steel sheet, roll formed and welded for added strength and durability, hot dip galvanised to BS EN ISO 1461:2009.

Motor

Motors are totally enclosed, airstream rated induction motors with sealed for life, maintenance free ball bearings, allowing the fan to be installed at any angle. Available in either 1 phase or 3 phase. Fans are suitable for operating temperatures between -20°C and +70°C. Single phase fans up to +50°C when speed controlled.

Impeller

Increased twist aerofoil impellers provide improved efficiency and acoustics suitable for higher stress applications. Blades are made from high quality pressure die cast aluminium (LM6), natural finish. Impellers are factory set at an angle to provide maximum performance.

Typical Applications

- Boiler Rooms
- Changing Rooms
- Commercial Kitchens
- Factories
- Gymnasiums
- Plant rooms
- Sport Centres
- Squash Courts
- Warehousing and stores

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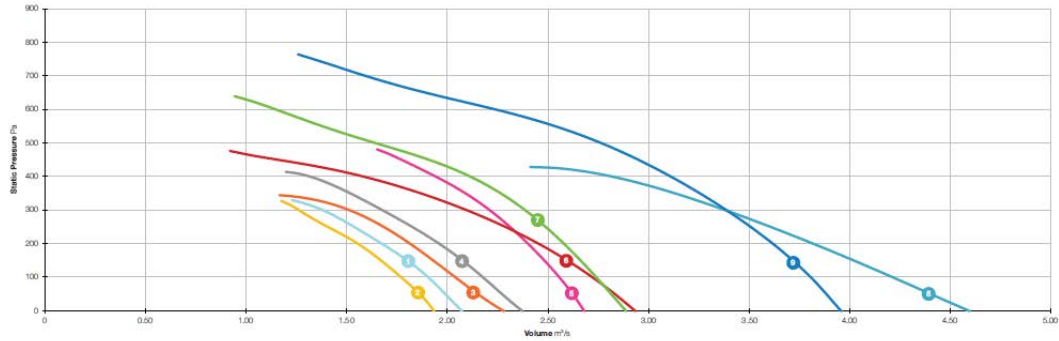
Product Coding

| Code | Reference |
|-------|---|
| TF | Product Range |
| 450 | Diameter (315/350/400...) |
| / | |
| 4 | Number of Poles (2/4/6) |
| - | |
| 3 | Voltage Supply (Single Phase / Three Phase) |
| AC | Motor Type (AC/EC) |
| A - Z | Additional Coding (A - Z) Product Variants |
| e.g. | TF450 / 4 - 3AC |

TURBOFLOW TF



Performance Range Curves



- 1 TF450 / 4-1AC
- 2 TF450 / 4-3AC
- 3 TF500 / 4-1AC
- 4 TF500 / 4A-3AC
- 5 TF500 / 4B-3AC
- 6 TF560 / 4-1AC
- 7 TF560 / 4-3AC
- 8 TF630 / 4-1AC
- 9 TF630 / 4-3AC

TURBOFLOW TF



Sound Data

Single Phase 220V to 240V / 50Hz

| Product Code | | Sound Power Level dBW @ Octave Band Hz | | | | | | | | Total dB |
|--------------|--------|--|-------|-------|-------|------|------|------|------|----------|
| | | 63Hz | 125Hz | 250Hz | 500Hz | 1kHz | 2kHz | 4kHz | 8kHz | |
| TF450/4-1AC | Inlet | 89 | 92 | 91 | 85 | 82 | 76 | 71 | 66 | 96 |
| | Outlet | 90 | 91 | 90 | 87 | 82 | 79 | 73 | 68 | 96 |
| TF500/4-1AC | Inlet | 78 | 86 | 89 | 83 | 77 | 74 | 70 | 63 | 92 |
| | Outlet | 79 | 86 | 88 | 82 | 79 | 75 | 71 | 64 | 91 |
| TF560/4-1AC | Inlet | 79 | 85 | 86 | 82 | 80 | 77 | 73 | 68 | 91 |
| | Outlet | 80 | 84 | 85 | 82 | 81 | 79 | 75 | 70 | 90 |
| TF630/4-1AC | Inlet | 86 | 87 | 88 | 85 | 84 | 83 | 80 | 75 | 94 |
| | Outlet | 85 | 87 | 88 | 86 | 84 | 81 | 76 | 71 | 94 |

Input

COMPACT SCP

Product Overview

- 10 standard sizes from 250mm to 800mm
- Air volume flow rates up to 5.61 m³/s
- Static pressures up to 401 Pa
- Highly efficient, lightweight induction motors
- Fully speed controllable
- Available in **AC** & **EC**



Featuring our high efficiency Series 1 impeller, the Compact SCP makes light work of handling large volumes of air against low resistance. The fan design, construction and finish provide a strong, durable and weatherproofed range.

Intelligent Design

Compact low profile design suitable for vertical or horizontal mounting.

Easy Installation

A fitted IP55 terminal box allows the fan to be positioned conveniently to incoming electrical inputs.

Impellers Designed For Efficiency

Impellers are adjustable pitch aerofoil with blades made from high quality GRP. Combined with increased blade chord and twist, we have achieved 7% higher efficiency, reducing overall energy consumption. Increased blade root reduces stress levels making our range of impellers ideal for arduous fan applications.

Corrosion Resistance

Specially treated against corrosion, powder coated with polyester epoxy paint.

Warranty

Each SCP has a 12 month warranty.

Construction

Constructed from mild steel and suitably treated to ensure full corrosion protection. Guards are epoxy powder coated. Fan plates and motors are finished in a powdered coated polyester epoxy paint in pastel beige.

Motor

AC motors possess greased for life ball bearings with fixed speed operating temperatures of between -20°C and +70°C and speed controlled operating temperatures of -20°C and +50°C. High efficiency EC motors comply with the efficiency level IE5 for operating temperatures up to +60°C EC.

Typical Applications

- Factories
- Sports Halls
- Shops
- Industrial Units
- Warehousing
- Schools
- Kitchens

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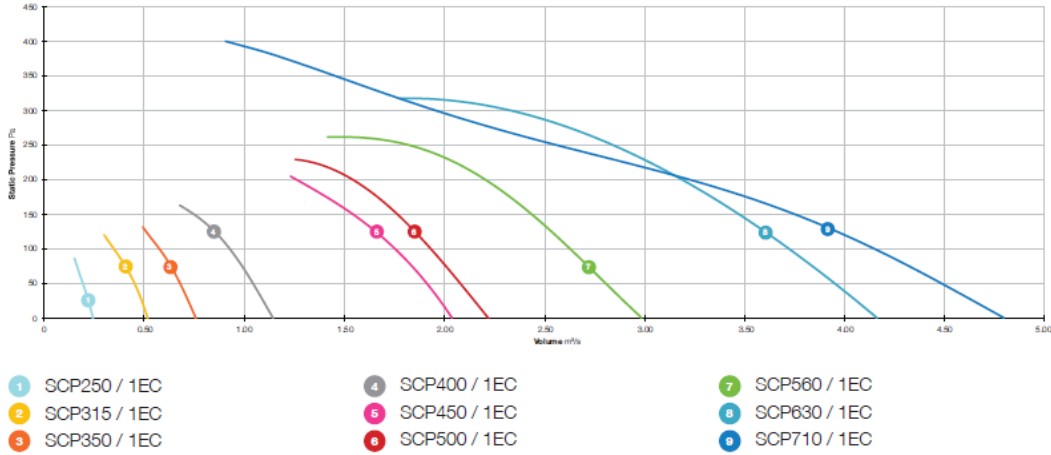
Product Coding

| Code | Reference |
|-------|---|
| SCP | Product Range |
| 250 | Diameter (250/315/360...) |
| / | |
| 4 | Number of Poles (2/4/6) |
| - | |
| 1 | Voltage Supply (Single Phase / Three Phase) |
| AC | Motor Type (AC/EC) |
| A - Z | Additional Coding (A - Z) Product Variants |
| e.g. | SCP250 / 4 - 1AC |

COMPACT SCP



Performance Range Curves



COMPACT SCP



Sound Data

Single Phase 220V to 277V / 50Hz or 60Hz

| Product Code | Control Voltage V | | Sound Power Level dBW @ Octave Band Hz | | | | | | | Total dB | |
|--------------|-------------------|--------|--|-------|-------|-------|------|------|------|----------|------|
| | | | 63Hz | 125Hz | 250Hz | 500Hz | 1kHz | 2kHz | 4kHz | | 8kHz |
| SCP400-1EC | 10 | Inlet | 61 | 72 | 77 | 78 | 76 | 72 | 69 | 66 | 83 |
| | | Outlet | 63 | 74 | 78 | 76 | 76 | 72 | 68 | 67 | 83 |
| | 8 | Inlet | 60 | 69 | 71 | 73 | 68 | 67 | 63 | 60 | 77 |
| | | Outlet | 60 | 64 | 72 | 68 | 68 | 66 | 62 | 60 | 76 |
| | 5 | Inlet | 50 | 65 | 66 | 57 | 58 | 60 | 52 | 48 | 70 |
| | | Outlet | 60 | 63 | 60 | 56 | 55 | 57 | 48 | 45 | 67 |
| | 2 | Inlet | 41 | 47 | 47 | 44 | 50 | 58 | 41 | 40 | 39 |
| | | Outlet | 53 | 57 | 46 | 42 | 49 | 56 | 43 | 42 | 38 |
| SCP450-1EC | 10 | Inlet | 62 | 79 | 83 | 78 | 74 | 73 | 70 | 68 | 86 |
| | | Outlet | 62 | 74 | 78 | 77 | 74 | 72 | 71 | 70 | 83 |
| | 8 | Inlet | 60 | 76 | 70 | 69 | 67 | 67 | 64 | 62 | 79 |
| | | Outlet | 58 | 72 | 71 | 69 | 68 | 67 | 65 | 63 | 77 |
| | 5 | Inlet | 63 | 64 | 59 | 55 | 59 | 61 | 50 | 47 | 69 |
| | | Outlet | 63 | 60 | 58 | 55 | 60 | 58 | 50 | 47 | 68 |
| | 2 | Inlet | 43 | 56 | 47 | 44 | 59 | 59 | 41 | 38 | 42 |
| | | Outlet | 46 | 53 | 49 | 46 | 60 | 55 | 42 | 39 | 41 |