

# Proposal for New Extraction System

---

329 Bradford Road  
Huddersfield, HD1 6ER

The following guidance outlines effective design features. You should assess existing and planned systems to make sure they meet these ventilation objectives.



*“We proudly deliver high quality engineering and cleaning services”*

Made 2 Shine LTD  
Unit 21 Poplar Road Business Centre  
Cleethorpes DN35 8BL  
Tel: 07424643200  
info@made2shinuk.com  
www.made2shineuk.com

## What the law says

### **The Workplace (Health, Safety and Welfare) Regulations 1992**

These Regulations require that employers provide effective and suitable ventilation in every enclosed workplace. This includes kitchens, which need ventilation to create a safe and comfortable working environment. Catering and cooking can produce significant amounts of fumes and vapours, as well as large amounts of heat. Mechanical extraction, via a canopy hood installed over the cooking appliances, can remove these fumes and vapour and discharge them to a safe location.

### **The Health and Safety at Work etc Act 1974**

The Act places duties on anyone in control of premises who makes them available as a place of work for others to take reasonable measures to ensure, so far as reasonably practicable, that the premises, plant and equipment are safe and without risks to health.

#### Cooling air

Balancing incoming cool air and extracted hot air effectively should help prevent the kitchen becoming too hot. For mechanical make-up air systems, direct the cooler air towards hot work positions. Otherwise, consider air conditioning or fixed fans that do not affect the efficiency of fume extraction. Local freestanding fans may cause air currents or turbulence, affecting the efficiency of fume extraction. They are not normally an effective way to provide make-up air. They may also introduce other hazards, such as tripping and electric shock hazards from the trailing cable.

#### Discharge

High-level discharge of extracted air is often needed to prevent nuisance to neighbouring properties. Avoid rain caps and other devices that impede upward vertical velocity. Never use devices that direct the discharge downward as they encourage down draught and re-entry of fumes into the building. Fume discharge should also be away from wet cooling towers.

### **New ventilation systems**

#### **The caterer**

The caterer will need to provide detailed information for the competent advisor, designer and installer, including the following information:

- Maximum demands likely to be placed on the ventilation (eg to cope with peaks of activity)
- Amount and type of kitchen equipment
- The menu
- Number of meals
- Number of staff

Advisors, suppliers and installers should be competent and have knowledge of industry practice and relevant health and safety guidance and legislation.

The caterer should consult with the safety or employee representatives in good time about any significant changes. Keeping records of design criteria, commissioning performance, maintenance requirements and of tests and inspections will enable maintenance, modification and testing against the original specification.

### **The building owner or manager**

The owner or manager of the building may provide facilities such as equipment and ventilation. In these cases, they should follow the advice here. Providing adequate ventilation will require the owner to obtain information on probable kitchen usage from the caterer.

### **The designer/design team**

The 'design team' means the various interested parties (owner, caterer, designer, supplier and installer). They need to discuss their respective information needs and what information each should supply.

The ventilation design engineer will need to take into account:

- the presence of gas appliances subject to the Gas Safety (Installation and Use) Regulations 1998 – in particular, the requirement for an adequate supply of air for combustion and flueing arrangements;
- kitchen usage information from the caterer;
- equipment information from the caterer or supplier, eg cleaning requirements, the amount of air required for complete combustion and the performance of the existing installation;
- the requirements or specifications for the air cleaning system, eg for grease removal at the canopy and also before final discharge outside;
- the limitations of the building, eg the available room may influence the sites and routes for air inlets or discharges;
- food hygiene requirements, eg identify a suitable source for clean make-up air; prevent pest entry; avoid grease accumulation and ensure easy cleaning of the system;
- heat control.

Assess the need for interlocking the ventilation power supply to the gas supply and take appropriate action. This decision should be based on a competent person's assessment of the risks associated with the use of the gas appliance. Further guidance for designers is available from industry-produced technical guidance, for example guidance from the Chartered Institution of Building Services Engineers (CIBSE) and the Building Engineering Services Association (BESA). See Further information.

## Proposal for extraction system

The new extraction system will include (\*1):

### Commercial Kitchen Canopy:

Our canopies are designed for small and medium size commercial kitchens.

All our instructions and recommendations are based on canopies being fitted with a maximum of 12 meters of duct work, and two 90 degree bends.



The canopies are manufactured from high quality stainless steel and contain a bank of baffle filters that are easily removed for cleaning. Will also include plenum grease trays and will have no sharp edges.

Existing Stainless steel canopy:

3700x1900x1200x500x450mm brushed type (first floor);

1000x1200x350x200 brushed type(cellar);

Will be installed with fire proof insulation as regulation requirements;

8x500x500x50 Baffle filters stainless-steel.

## Extractor fan:

---

TCBBx2/4-500 Large S&P

The fan performance which 2.313 m<sup>3</sup>/s @ free air.

The performance proposed at circa 72% - 1.66 m<sup>3</sup>/s @ 320Pa.

Moderate level noise 61.1 dB(A)

Weight: 35kg



---

## Silencers:

These attenuators or 'silencers' are suitable for temperatures

up to 200°C and a maximum pressure of 1500 pascals.

Excellent sound absorbing properties - **1000mm long**.

### Construction

Casing:

Galvanised mild steel (BS2989)

Inner Lining:

Perforated galvanised mild steel (BS2989).

Sound Absorbing Material:

Mineral fibre slabs faced with glass tissue.

Each reduces a fan noise level by 10-14dB (A)

Weight: 16,8kg/piece



---

## Anti-vibration supports – Anti-Vibration Mounts

### KSE-45

Rubber anti vibration mounts are used in conjunction with fan mounting feet and flanges.

They absorb vibration and attenuate fan noise.

Weight: 0,13kg/piece



---

## Mounting Foot

Mounting Foot, used to fit directly to the fan as part of a full Ancillary package. Can be used to mount the fan in the horizontal or vertical position.

Used in conjunction with Anti Vibration Mounts and Durodyne (flexible duct connector) reduce at minimum the vibration from extractor fan towards wall and duct system.

Weight: 1,2 kg/piece.



---

## Flame Resistant Flexible Duct Connectors DuroDyne Duct Connector

All Duct installations for HVAC systems in Commercial, Industrial & Residential premises are attached to mechanical equipment containing a fan or blower which generate & transmit Vibrations, Noises & rattles in the entire metal duct work.

### Design Features:

Duct connector consisting of a flame retardant fabric, secured to the galvanised sheet metal on either side by a double lock seam is inserted between the equipment/air duct & the ductwork to provide a wear resistant Airtight flexible connection to eliminate vibrations, noise & rattles.

Weight: 0,55 kg/piece.



### Power jet cowl:

Zinc-plated mild steel

Jet cowls offer an advantage over standard round cowls in that expelled air is directed vertically rather than laterally - as is common with most roof terminations. This decreases the possibility that exhaust fumes present a nuisance to neighbouring buildings. Using a jet cowl often means a vertical duct can be shorter than it would otherwise need to be with a standard cowl.

Rainwater is caught in a dish within the cowl and is fed out through a drainage tube.

Weight: 13kg



---

### Grease dual filter box:

## Filter Boxes FILB

Includes EU3 filter element

The duct mounted filter box is manufactured from galvanised sheet steel and is fitted with two spigots, so to fit directly with spiral wound ducting.

A lift off door offers simple access for changing or maintaining the Panel Filter.

- \*To fit standard spiral wound duct work
- \*Removable lid complete with closed cell gasket
- \*Can provide side or top access for air filters change
- \*Alternative Air Filter Grades upon request.

Weight: 2.3kg (excluding filters)



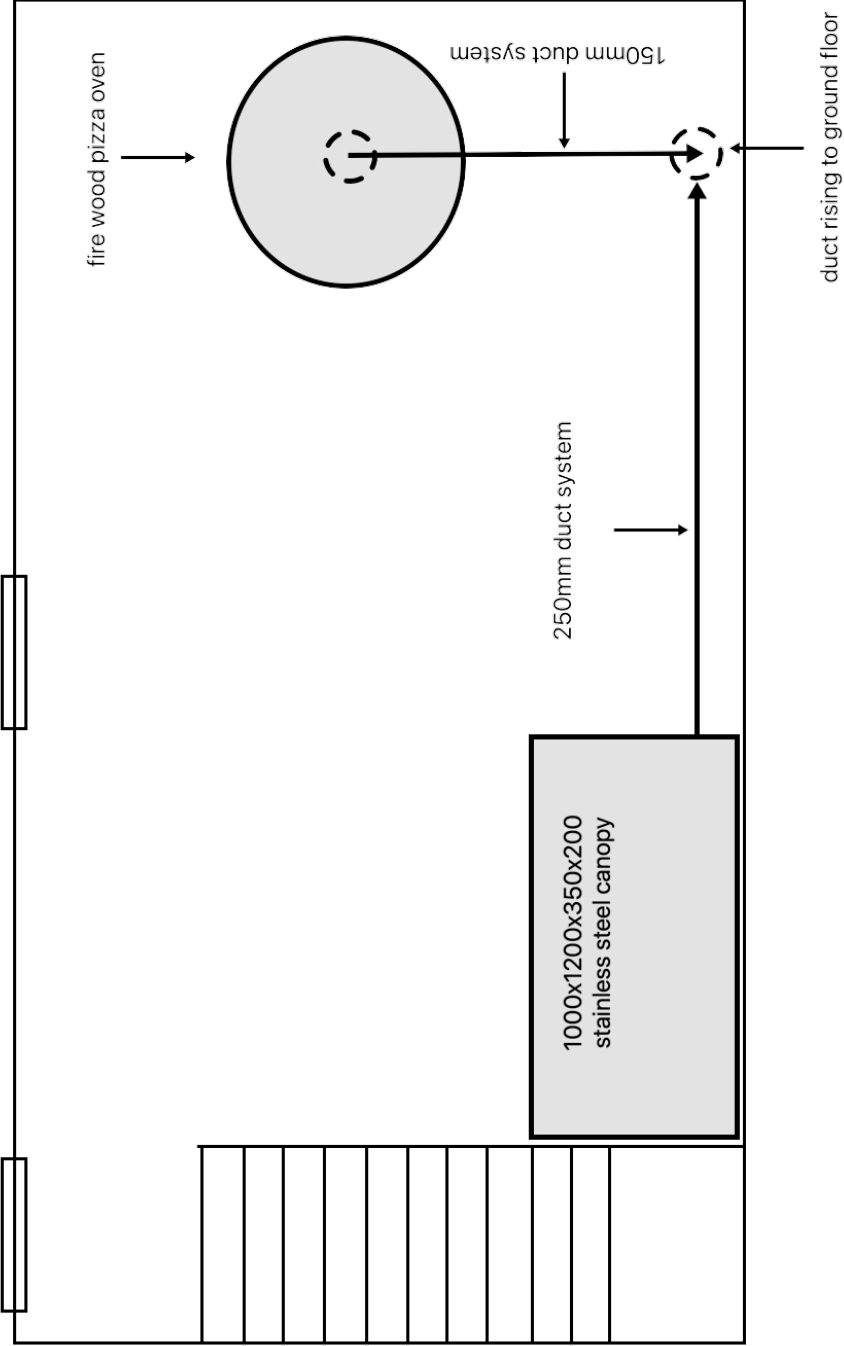
---

## Speed controller:

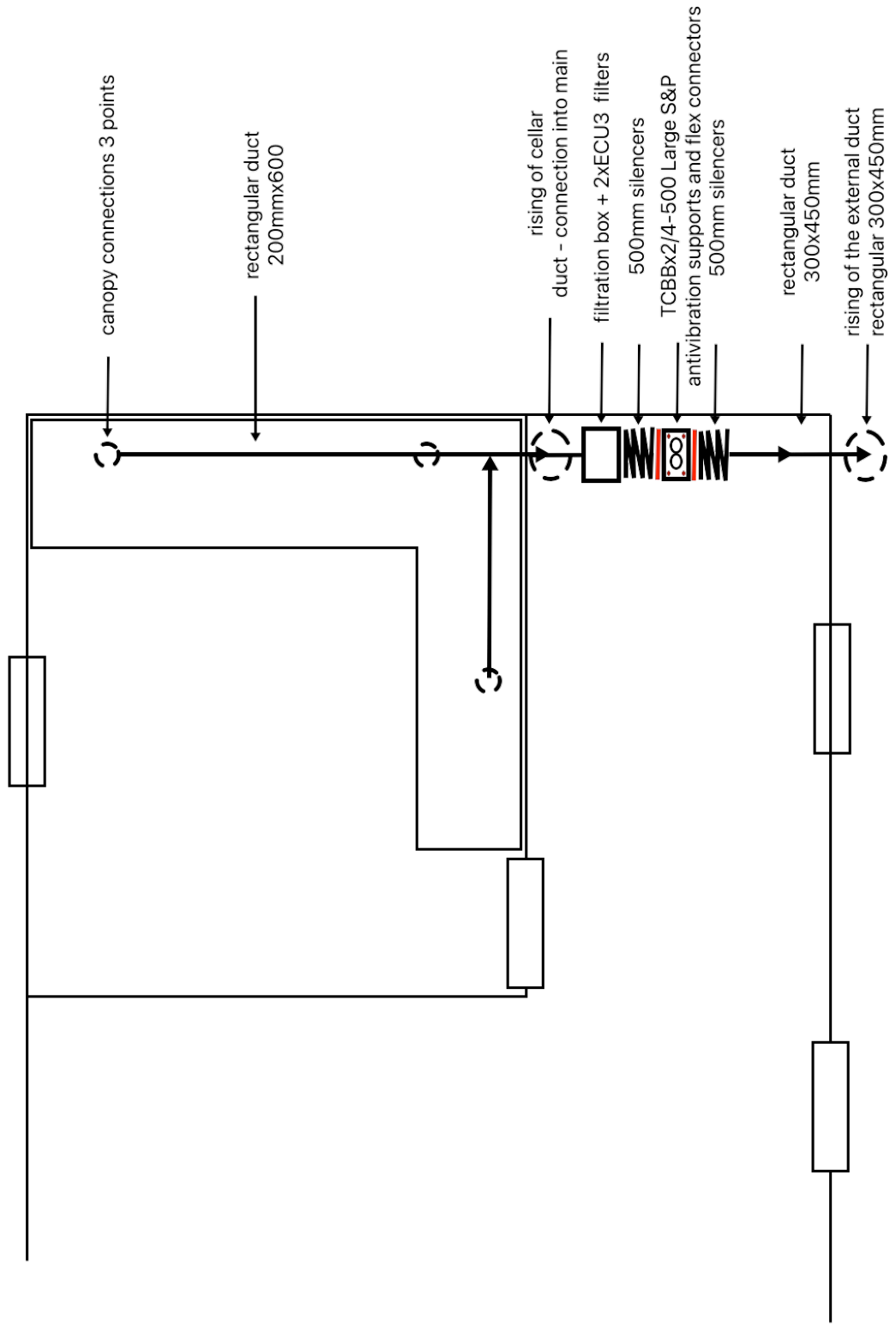
The M2S SCR1.3 genuine range of SCR Electronic fan speed controllers. This range of fan speed controllers can be used in conjunction with Gas Interlock Systems and with any Fan / Motor which is single phase – 240 volts and fan speed controllable using either 2 or 3 wire control (+earth).



Basement proposed extract system



Site address  
 329 Bradford Road  
 Huddersfield  
 HD1 6ER



Site address  
329 Bradford Road  
Huddersfield  
HD1 6ER

First floor Proposed extract system



**ESTIMATED** output of the system

**No vibration will be transmitted through the building due to antivibration supports and Durodyne - split rings.**

**The fan noise level will result in  $\pm 54\text{dB(A)}$  at 3 meter from the fan\*4.**

**The extractor fan will be fully boxed in galvanised box with a fire-retardant acoustic foam layer inside.**

**The efflux velocity at :**

Result  
Velocity of the efflux  
17.97 m/s

**The air flow in the canopy plenum will result at minimum 1,66 m<sup>3</sup>/s at an estimate pressure 320Pa.:**

- **8x500x500x50 Canopy Baffle filters (-  $\pm 4\%$ );**
- **2x90° Bends (-  $\pm 12\%$ );**
- **2xECU3 Filters (-  $\pm 3\%$ );**
- **Power jet cowl (-  $\pm 2\%$ );**
- **4m duct (-  $\pm 1\%$ );**

X  
X  
X  
X  
X  
X  
X  
X  
X  
X  
X  
X  
X  
X  
X  
X  
X  
X  
X  
X

\*1All the details above have an informational purpose, the fittings may be different as colour, format or size without changing the main usage or functionality.

\*2\*3 The drawings or blueprints have just an informational purpose and may not represent the actual building or place for which the proposal is intended. Will be used just as an example for a better understanding of our new extraction system proposal.

\*4 A completed extraction system certificate will be issued to confirm the output of the system, for any legal requirements customer must appoint an acoustician for a complete acoustic report.

## Proposed Maintenance

The extraction system is subjected to 6months (Frequency of cleaning Table) scheduled cleaning program due to moderate use and aerosols produced. A Hygiene certificate will be issued soon as job completed - followed by a full report with after and before pictures and W.F.T.T (wet film thickness test) measurements and details of the cleaning job carried out to TR/19 Standards.

A letter will be sent - 10days before cleaning time is due. **It is customer responsibility to reply and confirm the date and time suitable for the maintenance job.** If not replied a text message will be sent to confirm the end of our responsibilities.

### Frequency of Cleaning

The need for specialist cleaning of extract systems will depend on the level of usage of the cooking equipment, types and quantity of cooking and other risk factors such as vulnerability of the system to ignition and of the building and its occupant/users to system fire, hygiene, vermin and mechanical hazards. The adequate type of cleaning intervals are shown in table:

#### Frequency of Cleaning

Heavy Use	12-16 hours per day	- 3 monthly
Moderate Use	6-12 hours per day	- 6 monthly
Light Use	2-6 hours per day	- 12 monthly

#### Note to Table

The canopy and canopy/extract plenum are an area of higher fire risk and consideration should be given to more frequent cleaning in accordance with insurers requirements)

The frequency of cleaning should be adjusted by means of system testing (inspection/monitoring, so that surface grease deposit limits are not exceeded. The buildings insurance company should be consulted to ensure that the cleaning regime is compliant with the terms of their specific warranty.

Any cleaning regime should be justified by a considered risk assessment. (The latest Fire Precautions Workplace, and Management of Health & Safety at Work Regulations apply).

Regular cleaning will result in an improved mean standard and reduce the costs of cleaning as deposits are not allowed to bake and harden.

**Periodic specialist cleaning should be accompanied by daily or weekly cleaning of canopies, filters and associated drains and traps in accordance with manufacturers' recommendations, typically carried out by the kitchen operator.**

**Troubleshooting - maintenance:**

1.Noise increase	Ball bearings issue	Call for service.
2.Irregular noise	Foreign body into the extract fan*	Call for service.
3.Error or alarm - inverter	Extract fan or inverter issue	Call for service.
4.No suction	Dirty ECU3 filters *	Replace filters if available otherwise call for service.
	Canopy filters not maintained*	Wash toughly the stainless-steel canopy filters.
	Foreign body into power jet cowl* (system used without filtration)	blue roll tissue, aluminium foil, food cardboard on the power jet cowl. Call for service
	Extract fan – overload – grease deposit*	Clean - Extract fan Call for service.
System failure	Inverter not turning on	Electric fault Call for service.

**\* All errors red outlined above mentioned are not covered by our 1-year warranty. A call out and the cost of labour and parts may be charged if the reason of the fault is not manufacturer or installer responsibility.**

Call or contact our 24/7 for any needs regarding extractor fan:  
07424643200 – Dragos

Use for the office hours contacts:

[Info@made2shineuk.com](mailto:Info@made2shineuk.com) or “Use our website contact us”  
<https://www.made2shineuk.com/contact-us.html>