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KITCHEN VENTILATION SYSTEM BASIC MAINTENANCE MANUAL

PROJECT REFERENCE: Taco Bell, Reading
INSTALLATION DATE: tbc

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Introduction to Maintenance

As you know, a kitchen ventilation system is not just to satisfy the Gas Safe engineer or the local authorities (important considerations as they are), but to remove heat, smoke, odours and potentially harmful carbon monoxide (when cooking with gas fuelled equipment) from the kitchen to create an environment that is conducive to getting the best from you and your staff.

Vital to the ongoing performance, and therefore your continued satisfaction, is regular maintenance of the system as a whole.

NOTE - FAILURE TO KEEP THE SYSTEMS PROPERLY MAINTAINED MAY RESULT IN ANY WARRANTY BECOMING INVALID

Benefits of Maintenance

Hygiene is of paramount importance to any catering facility. Dirty facilities entice vermin and bacteria that can prove harmful if it gets into the food being prepared. You as the owner and/or operator are obliged to keep a good standard of hygiene and cleanliness, and this includes the ventilation equipment. The more often this is done the less work is involved each time, saving time and money as well as keeping up a high standard of cooking environment.

People will perform better if their work environment is clean. If care is taken with the cleanliness of the kitchen, then the same care will be taken over the cooking. If there are no risks of slips and falls due to grease on the floor then staff will be able to concentrate on their work and not suffer from absence due to injury. A kitchen is a dangerous enough workplace anyway, so minimising the risk and staff discomfort should be a high priority.

Reduction of risk from fire caused by grease build up – in the event of a fire, the less fuel it has to feed it the better. Regular cleaning of canopy filters, canopies fans, and ductwork can all reduce the damage done should a fire occur.

Long term performance of the system is aided by removal of grease build-up from all items of equipment. If grease is allowed to collect in duct, for example the physical size of the duct is reduced, meaning the fan has to work harder to move the same amount of air. Also, debris can be caught in the duct, causing potentially serious blockages or damage to fans.

By carrying out regular maintenance, cost savings can be made by reducing the need to replace expensive items such as fans. If grease etc is allowed to collect on the fan blades, over time they will become unbalanced and cause vibration which will eventually lead to fan failure, with all the cost and interruption to your kitchens' operations that this can cause.

As well as this, filters (eg supply air inlet filters or extract panel/carbon filters) need regular maintenance to maintain fan performance and life - for example, if a filter is blocked it can cause the fan to use more power to run which is not only less efficient but can cause damage to fans, controllers and gas interlock panels where current sensors are used. Additionally, if the filters are left so long that they collapse and disintegrate, they can get caught in the fans causing permanent damage

Introduction to Cleaning

Cleaning intervals are best decided through observation and should be the responsibility of the site manager. We recommend daily checks of the canopy grease drawers and the external surfaces, with weekly checks of the internal surfaces of the canopy.

Cleaning categories and minimum cleaning intervals are roughly described below but as mentioned above, this is subjective:

Kitchen type	Category
Cafe/tea shop	Light
Schools/Workplace kitchens	Light/Medium
Continental/hotels/supermarkets	Medium
Steak houses/kebab & chip shops	Medium/High
Fast food/oriental	High
Food factory	Very high

Category	Item			
	Baffle filter	Grease drawers	Canopy	Ducting
Light	Weekly	Weekly	Weekly	Yearly
Light/Medium	Weekly	Weekly	Weekly	Yearly
Medium	5 days	5 days	Weekly	6 months
Medium/High	3 days	2 days	5 days	6 months
High	Daily	Daily	5 days	Quarterly
Very High	Daily	Daily	5 days	Quarterly

So long as cleaning periods are not left too long, washing with mild detergents or soap is sufficient to clean all surfaces of the canopy. If intervals are extended, any stain may become baked on and will be more difficult to remove.

Whilst it is possible for site staff to carry out the canopy cleaning duties, we would only recommend this takes place for lighter categories of kitchen cooking. A dedicated cleaning company should be used for higher categories and ductwork as well as specialist odour control equipment. It is advised that a regular maintenance contract is organised.

Basic Cleaning Instructions & Maintenance

We strongly recommend that cleaners use personal protective equipment, especially gloves, when carrying out cleaning and maintenance works on canopies, filters or ductwork. Items may be hot and could have sharp edges. An on-site risk assessment should be carried out prior to any works being done.

***NOTE - FAILURE TO KEEP THE SYSTEMS PROPERLY MAINTAINED
MAY RESULT IN ANY WARRANTY BECOMING INVALID***

Fans & duct

It is essential that any fan used in a commercial kitchen environment is properly maintained. If dirt builds up on a motor it can act as insulation which causes the motor to operate at elevated temperatures, resulting in shortened motor life. Fan blades have a tendency to attract debris and grease and such a build-up can reduce fan performance by up to 30%. In addition, an excessive build-up of dirt or grease on the fan blade can add imbalance causing excessive vibration. This can lead to fatigue and a potentially dangerous failure.

The risk of fire originating in a duct system can be reduced with regular duct cleaning being a very important function of any ventilation maintenance program, greasy deposits left in the ductwork will build-up as time progresses making removal more difficult and time-consuming and creating a fire risk.

Prior to cleaning, the equipment (fan, odour control etc) must be electrically isolated. the isolator should ideally be locked in position. It is also important to note that even with the removal of electrical power, some fan impellers can have a tendency to rotate or turbine under the action of air naturally passing through the duct. It is therefore recommended that impellers are locked.

The worst of the grease deposits can be scraped from the casing, impeller and motor, then they can be cleaned with a brush or a cloth soaked in a mild detergent solution to remove the remaining grease. Care must be taken not to damage the impeller blades or any balancing weights; distorted blades will cause a vibration-inducing imbalance, reducing fan performance and life.

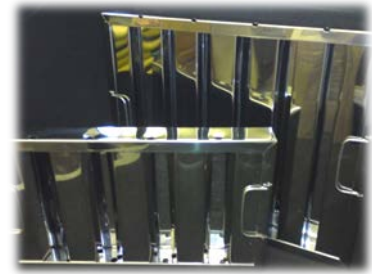
Fans should not be exposed to pressure washers or steam lances as these can break down or remove the grease in the motor bearings and penetrate the motor casings with the risk of damage to the motor windings as the steam condenses.

The use of caustic cleaning products and degreasing compounds to clean the fan should be avoided as these can migrate into the bearings and windings of the motor.

If the fan is removed from the ductwork before cleaning begins, it is not recommended that the impellers are removed to enable cleaning as without the correct hub pulling tools, undue stress could be placed on the blades or bearings.

Canopy Filters

These filters are critical to the operation of the system. They reduce the amount of grease getting into the ductwork and form a fire barrier (except in the case of mesh filters) between the cookline and canopy. They should be regularly cleaned to maintain system performance which will be degraded if the filters are blocked. Any damaged filters should be replaced as soon as possible.



Filters are easily removed by lifting up and tilting so that the bottom comes forward and out of the bottom channel. The filter can then be lowered out of the top channel.

Only remove canopy filters after the extract fan is switched off and when the cooking equipment has cooled down.

1. Steps may be required to access filters.
2. Remove canopy filters from filter plenum, ideally using gloves.
3. The filters should be inspected on a daily basis and washed if required, using the prescribed cleaning methods (see separate information sheet).

Grease Drawers

These containers catch any grease that may bypass the canopy filters and collect in the adaptor/housing bottom retaining runners. The grease runs to a distribution channel and so to the drawers. To avoid leaks from overflows, the drawers should be regularly emptied.

1. Only remove grease drawers when the extract system is off.
2. Drawers pull out, using integral handle. Take care if the drawer is full to avoid spillage of potentially hot grease – gloves are recommended.
3. Empty grease into suitable container or grease guzzler-connected sink.
4. Drawer can be wiped clean with cleaning solution or in a dishwasher.

Canopy

1. The surface of the canopy can be kept clean using a damp cloth and colloidal liquid detergent solution. After removal of any surface grease, a stainless steel cleaner may be applied. Then wipe dry.
2. The grease collection drawers should be regularly emptied and cleaned.
3. The condense channels should be wiped clean on a regular basis.

Lighting

Canopies are supplied with either recessed vapour-proof twin-tube fluorescent units, bulkhead type or down-light fittings.

Recessed lights have 600 mm (18w), 1200mm (36w)



or 1800mm (70w) light tubes which are accessed by removing the lens retaining screws and removing the lens, taking care as these can be heavy. Tubes are unclipped from the holders.



Bulkhead lights are fitted with energy saving 8-14w bulbs, accessed by unscrewing the glass lens.

Down-lights have GU10 5W LED lamps which are sealed units so any fault would require a replacement light assembly.



Ensure that all cooking equipment is off and cool before carrying out any works to the lighting. Use appropriate access equipment if required, and suitable high-grip gloves. It is advised that two people carry out any works to the larger light units as the lens is quite heavy.

Lenses should be cleaned at the same time as the rest of the canopy. Avoid using abrasive fluids or cloths as these can scratch the lens surface, reducing the lighting effect.

Pleated Panel Pre-Filters - Supply Air

These filters, for the supply air and/or extract, help clean the air of larger particles to keep the incoming fresh air insect/dust etc. Where carbon filters are fitted, these pre-filters help extend carbon filter life by removing larger particles of grease etc so keeping the carbon filters clean. If they are not changed the carbon filters can become blocked, reducing the efficiency and performance of the fans as well as potentially causing damage to them.

We would recommend the use of at least G4/EU3 grade pleated filters. Glass fibre filters should not be used.

These filters should be checked at least monthly to begin with. Inspection periods may be extended if deterioration is found to be slow. Filters should be changed when fully discoloured.



Odour control – Introzone unit

The electrically produces odour treating ozone which is mixed with the airflow in the extract system.

A service contract will be required to maintain this unit, which is necessary bi-annually – this should be carried out by Nationwide Ventilation only.

Under no circumstances should any staff member open the unit. Any potential faults (ie increase in or reports of odour at the discharge) should be reported and an engineer will be dispatched to investigate.

Basic Operating Instructions

Extract & Supply Air Systems

1. Ensure that canopy filters are always fitted before the extraction is turned on.
2. Switch the fan remote switch on. Adjust to required level.
3. Once the extract fan is running, the Introzone odour control unit will automatically activate. It will also switch off once the extract fan is switched off. **No staff intervention is required with this unit.**

Equipment List

MAIN CANOPY

3 x stainless steel baffle filter, 500w x 400h nominal size
4 x IP65 downlights with GU10 LED lamps

EXTRACT & SUPPLY AIR

Fan : Elta SMB550/4-1AC
Controller : Elta 149-TC14

Filter : 1 @ 595x595x95, min G4 grade disposable

ODOUR CONTROL

Introzone ozone generator, 1 x 10g plates