

# *Refresh Ultima Tower*

**ULTIMA TOWER REFRESH RANGE – SERIES 1**

**INSTALLATION, OPERATING AND MAINTENANCE MANUAL**

**PLEASE LEAVE WITH OPERATOR**

**A34/099 R1** **ECN 8833 April 2019**

**EC DECLARATION OF CONFORMITY**
(Guarantee of Production Quality)

We, Imperial Machine Company Limited of:
Unit 1, Abbey Road, Wrexham Industrial Estate, Wrexham, LL13 9RF
Declare under our sole responsibility that the machine

***ULTIMA TOWER REFRESH RANGE – SERIES 1***

As described in the attached technical documentation is in conformity with the Machinery Directive 2006/42/EC and is manufactured under quality system BS EN ISO 9001. It is also in conformity with the protection requirements of the Electro Magnetic Compatibility Directive 2014/30/EU and is manufactured in accordance with harmonised standards EN 61000-6-1 Immunity and EN 61000-6-3 Emissions (plus product specific standards).
It also satisfies the essential requirements of the Low Voltage Directive 2014/35/EU and is manufactured in accordance with harmonised standard EN 60204-1 Safety of Machinery (Electrical Equipment).

Approved by E Plumb, Engineering Manager



Signed at Wrexham, Date April 2019

**DISCLAIMER**
Whilst every care is taken in ensuring the information contained herein is accurate, no responsibility implied, or otherwise, is accepted for loss or damage incurred due to this information. It is the responsibility of the reader to ensure the method used is suitable in accordance with relevant health & safety legislation for his particular application and he should satisfy himself by conducting risk assessments and method statements before proceeding with a trial or sample component.

**GUARANTEE**
This equipment is guaranteed by IMC Britannia for 2 Years from the date of purchase from IMC Britannia or from one of its stockists, dealers or distributors.

The guarantee is limited to the replacement of faulty parts or products and excludes any consequential loss or expense incurred by purchasers. Defects which arise from faulty installation, inadequate maintenance, incorrect use, connection to the wrong electricity supply or fair wear and tear are not covered by the guarantee.

**Please observe these instructions carefully**
This guarantee applies in this form to installations within the UK only.

**DELIVERY**
- Check the package is complete to the delivery note and that there are no missing items.
- Check the package is undamaged.
- Where items will not be unpacked straight away, check:
- The shrink-wrap is complete and plastic banding is secure.
- There are no edges protruding which can become damaged or cause injury. Where edges are exposed, cover using suitable protection.

**SAMPLE RATING LABEL**



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**Overview**

This installation, operation and maintenance manual covers:

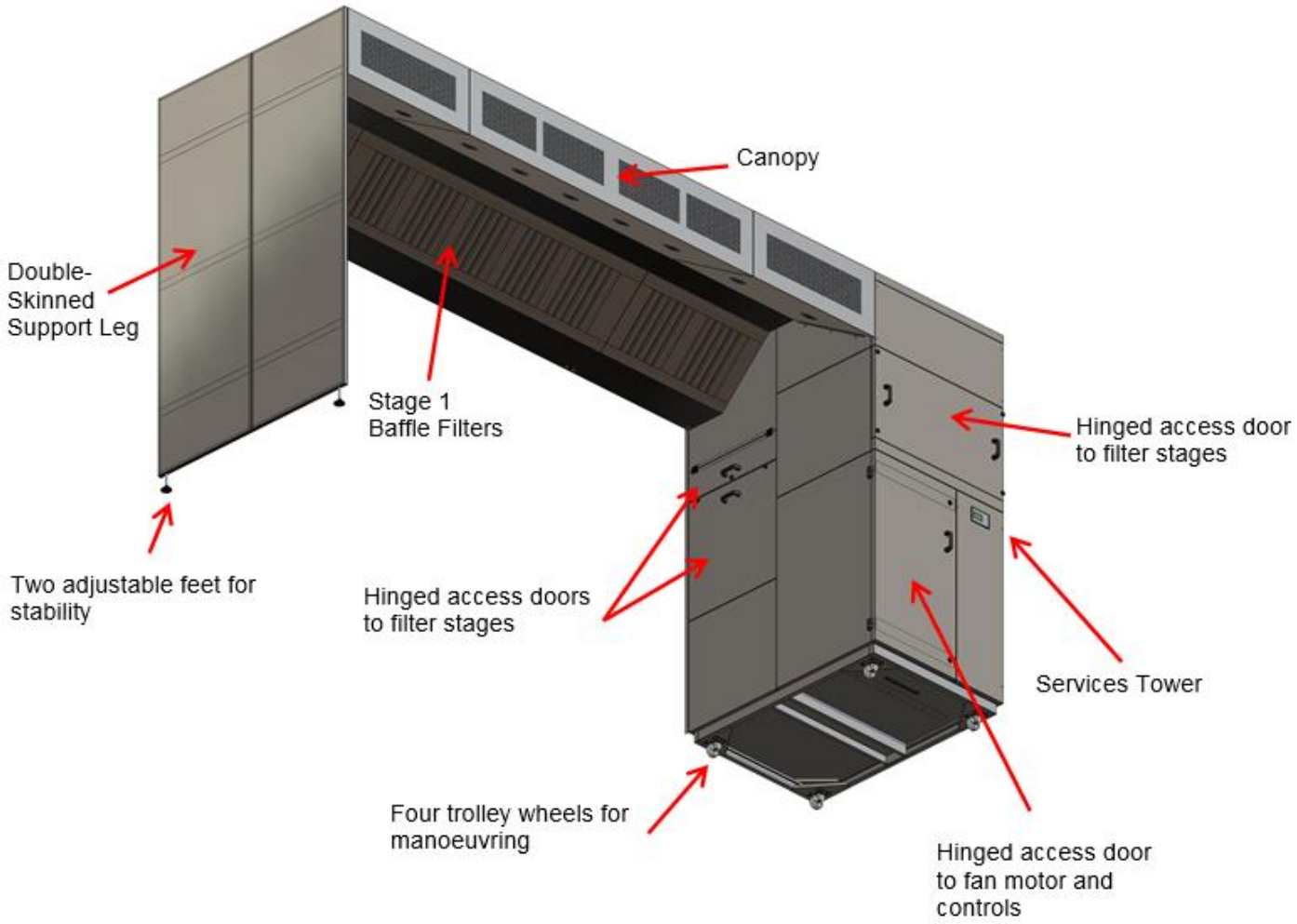


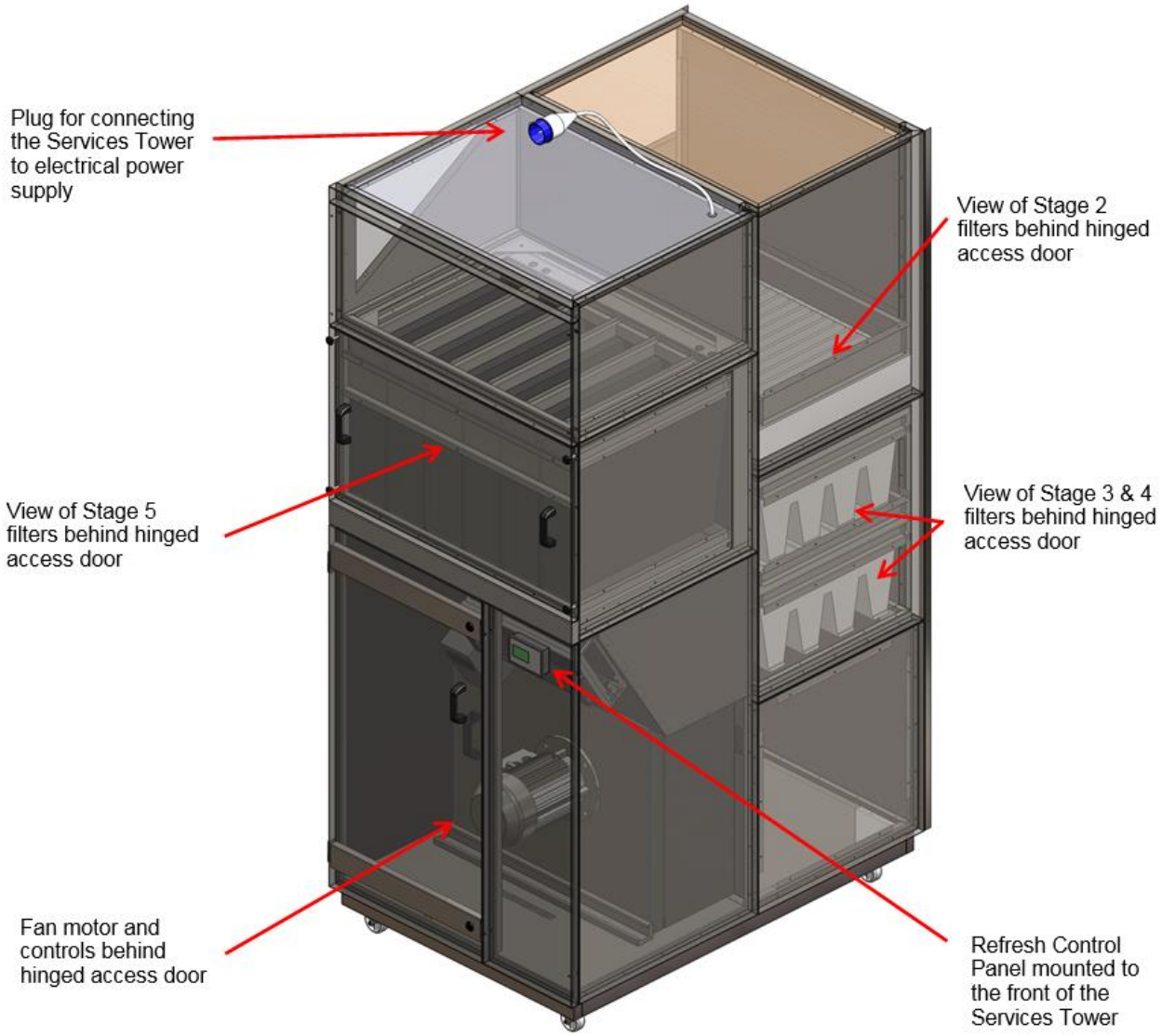
**Refresh Ultima Tower**

**REFRESH ULTIMA TOWER**

The Refresh ultima tower unit is similar in construction and filtration design as the Refresh Mini, Midi & Maxi units.

The following graphic provides a detailed overview of the unit.




Plug for connecting the Services Tower to electrical power supply
View of Stage 2 filters behind hinged access door
View of Stage 5 filters behind hinged access door
View of Stage 3 & 4 filters behind hinged access door
Fan motor and controls behind hinged access door
Refresh Control Panel mounted to the front of the Services Tower

**GLOSSARY OF TERMS**

This section provides a glossary of terms used in the manual.

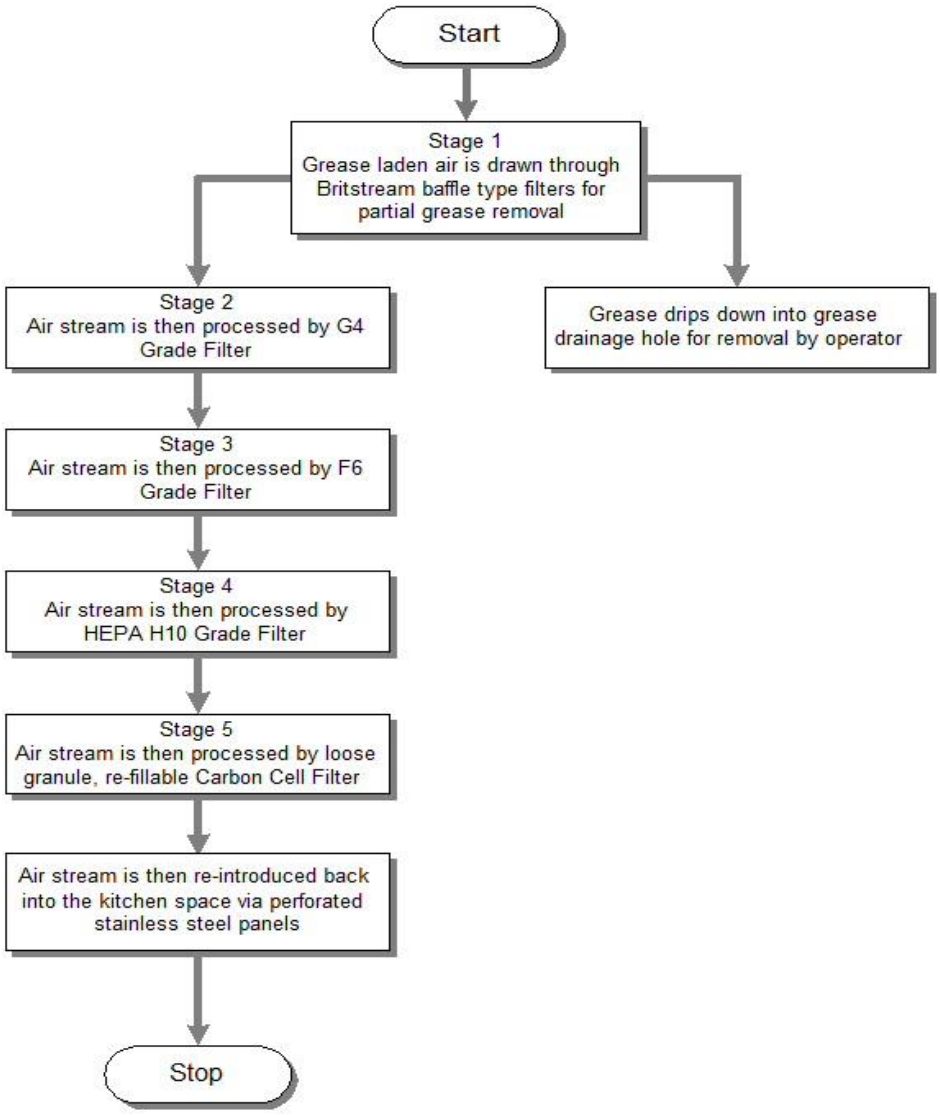
| Term | Definition |
|---|---|
| Refresh Unit | Product name given to a range of stainless steel kitchen canopies |
| Refresh Control Panel | Product name for the twin function intelligent controls package to control the fan speed via operator buttons and to monitor the life-time of each filtration stage |
| Fan | A backward curved centrifugal fan housed in the Services Tower to draw grease laden air through the filter stages |
| Canopy | A rigid, self-supporting stainless steel structure which acts as a point of extraction for grease laden kitchen air |
| Baffle Filter | A high efficiency filter for removing entrained grease and moisture from extract air |
| Grease Drainage Hole | Allows drainage of entrained grease droplets and moisture which fall from the grease filters |

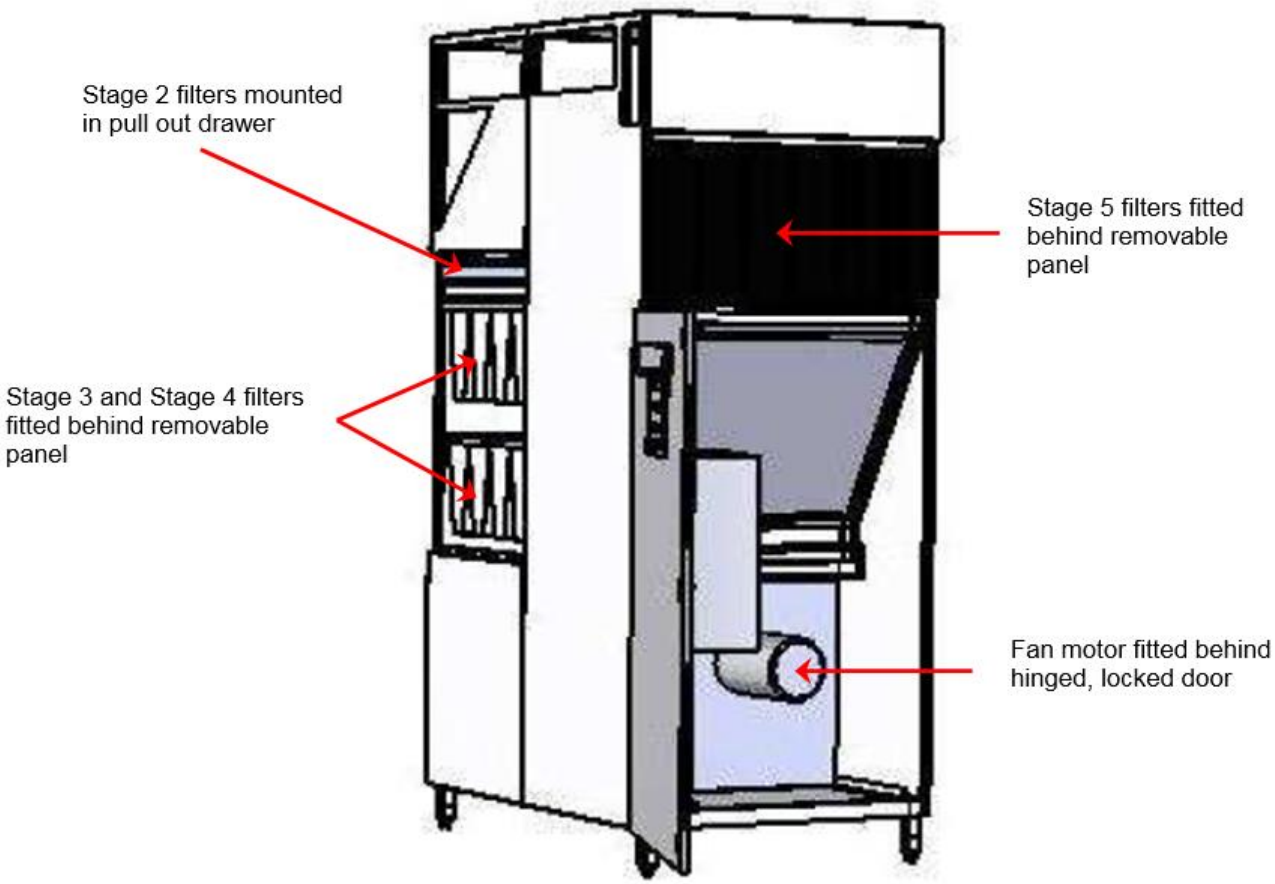
**SYSTEM OVERVIEW**
Functional Description

When cooking, hot, humid and grease laden air is extracted by the unit.
A backward curved centrifugal fan, mounted on a slide-out fan plate at the top of the unit, draws contaminated grease laden air from cooking appliances through four stages of filtration.

The five stages of filtration are:
Stage 1: High efficiency Britstream baffle-type grease filters mounted at the front of the canopy
Stage 2: G4 filter pad, mounted horizontally within the rear section of the Services Tower
Stage 3: HEPA H10 filter panels mounted horizontally below the stage 3 filters
Stage 4: HEPA H10 filter panels mounted horizontally below the stage 3 filters
Stage 5: HEPA H10 filter panels mounted horizontally below the stage 3 filters

Refer to the following process flow, which describes the five stages of filtration:




Stage 2 filters mounted in pull out drawer
Stage 5 filters fitted behind removable panel
Stage 3 and Stage 4 filters fitted behind removable panel
Fan motor fitted behind hinged, locked door

**GREASE DRAINAGE HOLE:**

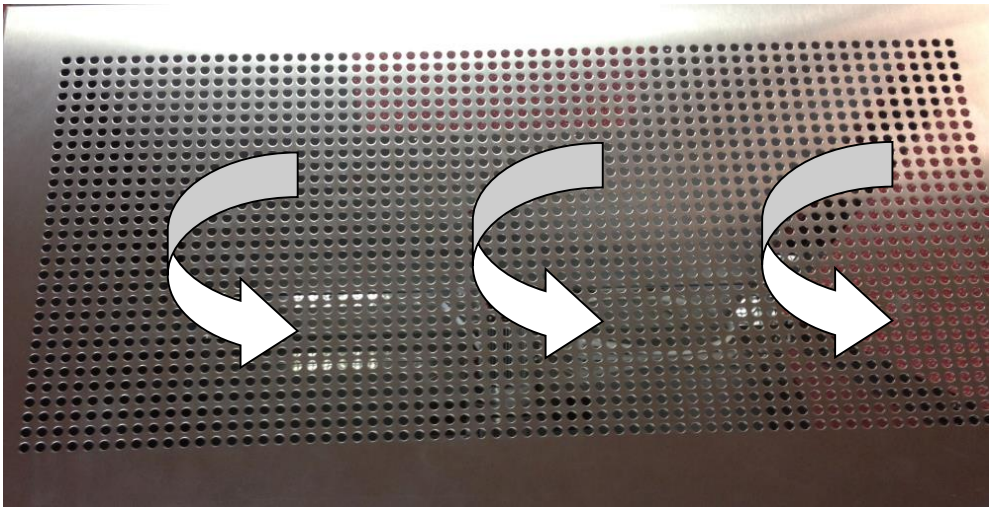
Collected grease and moisture drains down and into the grease drainage hole. Refer to the picture below.



**Grease Drainage Hole**

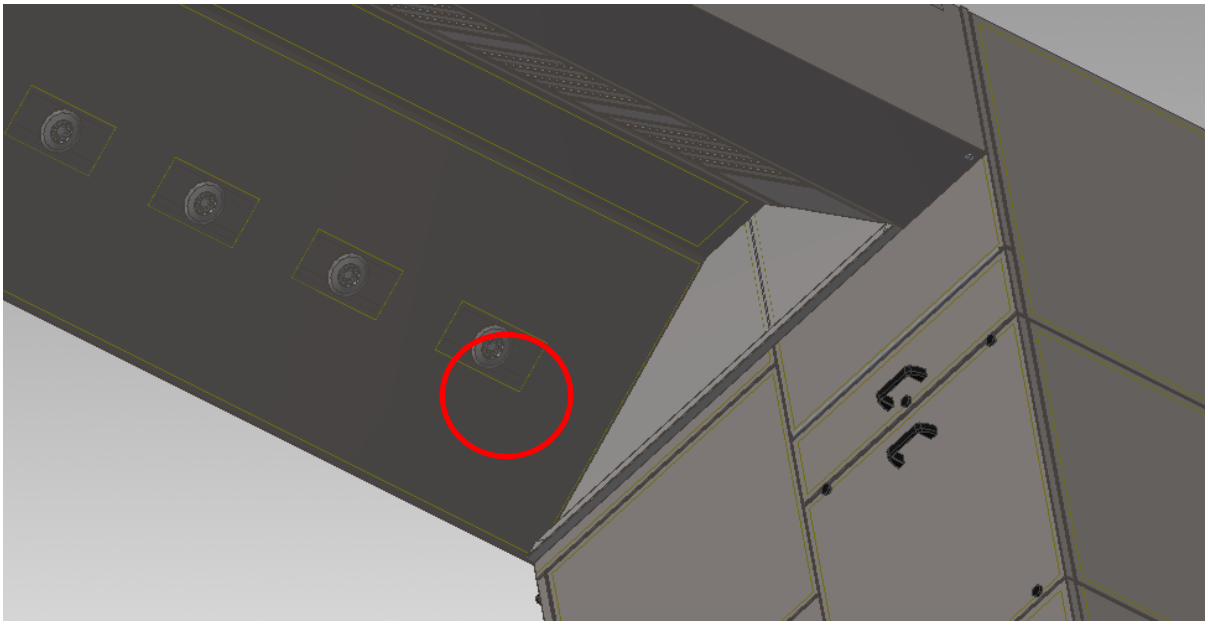
**SUPPLY AIR DIFFUSER:**

The fixed supply air diffuser allows filtered air to be reintroduced back into the kitchen space. Refer to the picture below.



**Perforated Diffuser Panel**

**LED SPOT LIGHTS**: LED spot lights are fitted to the inside surface of the canopy. Refer to the picture below:



**LED Spot Lights**

**REFRESH CONTROL PANEL (REFRESH ULTIMA)**

The Refresh Ultima comes complete with a control panel fitted. The control panel is mounted at the front of the Services Tower.




**Refresh Control Panel**

This controls package has two functions:

1. To control the fan speed via operator buttons. The motor speed is controlled via inverter drive.
2. To monitor the life-time of each of the 4 main stages of disposable filter media types.

**FILTER RESET PANEL**

The filter reset panel allows the operator to set the lifecycle of the filter. The filter reset panel is mounted behind the Refresh Control panel inside the Services Tower.




**Filter Reset Panel**

**Assembly, Installation and Commissioning**

This section refers to all Refresh units.

**Risk Assessment**

A full **risk assessment** must be carried out before assembly and installation work commences on site. The risk assessment should identify all Personal Protective Equipment (PPE) requirements. This should be undertaken prior to the installation team arriving. Consideration should also be given to drafting a full method statement for the process.

**Access and Offloading**

A safe **access** route must be established into the area in which the Refresh Unit will be installed. This area is to be free from obstruction

A suitable **offloading** point must be identified before you begin to unload and it should be as close to the installation area as possible

**Warnings and Cautions**

**WARNING**:

DO NOT INSTALL THIS EQUIPMENT FOR THE VENTILATION OF GAS, OIL OR SOLID FUELLED EQUIPMENT. RISK TO THE HEALTH OF OPERATIVES CAUSED BY THE ACTUAL COMBUSTION PROCESS WHICH USES UP AVAILABLE OXYGEN FROM THE COOKING SPACE AND CREATES TOXIC CARBON BASED GAS EMISSIONS. ONLY ELECTRICALLY POWERED EQUIPMENT MUST EVER BE VENTILATED BY THIS TYPE OF SYSTEM

**WARNING**:

COMPETANT PERSONNEL FAMILIAR WITH THE ASSESSMENT OF HAZARDS AND RISKS ASSOCIATED WITH INDUSTRIAL ELECTRICAL AND VENTILATION EQUIPMENT SUCH AS FANS AND AIR HANDLING UNITS SHOULD INSTALL THE PRODUCT.

**WARNING**:
USE LIFTING EQUIPMENT WHICH HAS A SUITABLE SAFE WORKING LOAD FOR THE EQUIPMENT BEING LIFTED.

**WARNING**:
ENSURE STEPS, PODIUM STEPS, SCISSOR LIFT OR MOBILE SCAFFOLD TOWER ARE SECURE AND STABLE BEFORE USE.

**WARNING**:
MAKE SURE THE CANOPY IS FULLY SECURED BEFORE REMOVING THE SUPPORT STANDS

**CAUTION**:
Supplied packaging provides protection against scratches and scrapes only

**STORAGE AND PRESERVATION**

**Storage**

**CAUTION**:

Supplied packaging provides protection against scratches and scrapes only.
Items must not be stored in high traffic areas. No impact protection is provided.

### Preservation

Items must be stored in dry conditions.

### Assembly

Preparation for Unpacking

- Ensure you place items to be unpacked as near as possible to the site of installation.
- Ensure you have sufficient free space to work.

### Unpacking Procedures

- Using a suitable tool, remove the plastic banding around the item
- Remove all packaging as necessary.

### Preparation for Assembly

Personnel

- Skilled site engineers
- Senior site installation engineers (site Foreman).

### Personal Protective Equipment (PPE)

The need for **PPE** must be identified once a full risk assessment has been carried out.
Below is a list of PPE that **must** be worn when assembling BKV equipment:

- Safety footwear with steel mid-sole, steel toe caps, padded ankle protection and high grip soles.
- High visibility vest
- Kevlar gloves
- Carpenter gloves
- Safety spectacles
- Safety goggles.
- Tools Required:
- Suitable and approved lifting equipment
- Adjustable support stands
- Spirit level
- Suitable hand tools]
- Suitable spanner to tighten M10 fixings.

**INSTALLATION**

Preparation for Installation

**WARNING**:

DO NOT INSTALL THIS EQUIPMENT FOR THE VENTILATION OF GAS, OIL OR SOLID FUELLED EQUIPMENT. RISK TO THE HEALTH OF OPERATIVES CAUSED BY THE ACTUAL COMBUSTION PROCESS WHICH USES UP AVAILABLE OXYGEN FROM THE COOKING SPACE AND CREATES TOXIC CARBON BASED GAS EMISSIONS. ONLY ELECTRICALLY POWERED EQUIPMENT MUST EVER BE VENTILATED BY THIS TYPE OF SYSTEM

You must have the following completed documentation before installation of this equipment:

- Site installation form
- Manufacture and location drawings
- Site survey form
- Onsite inspection form
- Risk assessments
- Suitable Method Statements.

**Tools, Equipment, Consumables and Fixings Required**

**Tools:**

- Spirit level
- Suitable spanner to tighten M6 fixings
- Suitable tool to tighten the canopy to the kitchen wall (where necessary).

**Equipment:**

- Mobile tower scaffold
- Podium steps
- Steps (when required)
- Scissor Lift (when required)
- Suitable and approved lifting equipment
- Adjustable support stands
- Battery Powered Impact Drill
- Battery Powered Hammer drills
- Battery Powered Hand drills
- Battery Powered Grinderette.

**Consumables:**

- Unistrut
- Fixings box containing an assortment of mechanical fixings and accessories
- Silicone sealant.

**Fixings:**

- M6 fixings
- M10 fixings
- Suitable screws, plugs or anchors as necessary (to fix the canopy against the wall).

**General Installation Notes**

- To avoid the risk of accidents and damage to the kitchen Refresh Unit the following should be adhered to:
- You must install the Refresh Unit in accordance with these instructions
- Any installation work must be carried out by competent personnel
- In all cases, a minimum of two competent personnel are required
- Installation personnel should be fully trained in all relevant tools and equipment required to successfully install the Refresh Unit

- A safe method of access to the fixing points must be gained by use of previously identified suitable access equipment
- It is suggested that at least a small air change rate in the order of 10 to 15 air changes per hour be incorporated if possible. This will provide a small amount of background ventilation, create a negative pressure and help retain cooking odours within the kitchen space
- Before installation, check the building structure to which the Refresh Unit is to be fitted for:
  - Electric cables
  - Gas pipes
  - Water pipes.
- All equipment installed below the Refresh Unit must either be:
  - Fully removable, or
  - Mounted or positioned in such a way as to allow regular access to the filter grease drawer
  - Mounted or positioned in such a way as to allow regular access to the door on the Inside face of the tower.
  -

**Installing the Unit**

Please note the following step guidelines must be taken into consideration during the installation of BKV products.

**WARNING**:

COMPETENT PERSONNEL FAMILIAR WITH THE ASSESSMENT OF HAZARDS AND RISKS ASSOCIATED WITH INDUSTRIAL ELECTRICAL AND VENTILATION EQUIPMENT SUCH AS FANS AND AIR HANDLING UNITS SHOULD INSTALL THIS EQUIPMENT.

- Where it is necessary to fix the unit against a wall:
  - Using the battery powered equipment, Unistrut and fixings from the fixings box, mount the unit against the wall.
  - Using the spirit level, make sure the unit is still level.
  - Using screws, plugs or anchors, fix the unit to the wall. Using a suitable tool, tighten the fixings until the unit is fully secure.
- Connect the main power lead to the incoming power supply.
- Install the required filters, blanks and panels into correct openings and positions.
- Complete the “On site final inspection” checklist.
- The customer site contact or main contractor must inspect the completed installation and sign the “Site installation form”. All comments, provisos or alternative instructions given must be noted on this form. Leave a copy with signee for their records.

**COMMISSIONING**
**Pre-commissioning Procedures**

**PPE**
Suitable protective clothing.

**Refresh Control Panel**
Once all of the wiring has been completed and tested, the system is ready to be commissioned. Refer to the section below.

**Commissioning Procedures**
Setting up the Filter Lifetime Monitoring
**Note:** The following procedures apply to the Refresh Ultima only.

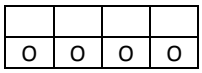
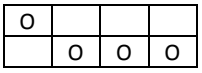
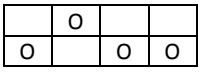
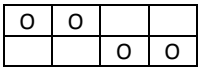
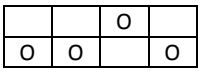
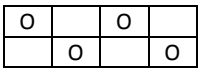
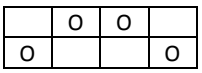
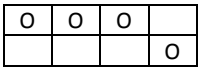
**Filter Life Expectancies**
This will vary depending upon the establishment. For this reason, the life expectancies can be reprogrammed to suit. However, the pre-set default times will be as per the maintenance table for "Medium category establishments" unless Britannia Kitchen Ventilation has been instructed to provide a different setup (in writing and prior to delivery).

- To access the filter stage reset panel, open the hinged access panels at the lower front of the Services Tower.




**Filter stage reset panel**

- Using the DIL switches 1, 2, 3 & 4 (toggle switches) on the front of the filter stage reset panel; the lifetime of the filters (in hours) can be set. Refer to the following table of filter lifetimes for Stages 2, 3, 4 & 5:

| Mode Code | DIL switch | Filter Lifetime (hours) Stage 2 | Filter Lifetime (hours) Stage 3 | Filter Lifetime (hours) Stage 4 | Filter Lifetime (hours) Stage 5 |
|---|---|---|---|---|---|
| 0* |  | 54 | 144 | 144 | 216 |
| 1 |  | 42 | 320 | 320 | 480 |
| 2 |  | 63 | 320 | 320 | 480 |
| 3 |  | 63 | 320 | 320 | 720 |
| 4 |  | 63 | 480 | 480 | 720 |
| 5 |  | 84 | 480 | 480 | 720 |
| 6 |  | 84 | 540 | 540 | 720 |
| 7 |  | 84 | 540 | 540 | 960 |

* - TEST MODE

Filter lifetimes are quoted in seconds.

**Post Commissioning Procedures**
None, the system is plug-and-play

**OPERATION**

**Introduction**

This section provides operating instructions for the Refresh Control Panel. The Refresh Control Panel is installed in the Refresh Ultima only.

Warnings and Cautions use the following conventions:

**WARNING** - danger of death or to the health of personnel

**CAUTION** - danger of damage to equipment.

It is recommend that the end user should carry-out detailed in-house risk assessments for all aspects of operating Refresh Units.

**Operation Overview**

The Refresh Control Panel is comprised of an operator information screen and touch buttons. The touch buttons allow the operator to:

- Start the fans in Low Speed
- Slow the fans from High to Med, or from Med to Low speeds
- Stop the fans
- Mute active alarm sounds
- Access and cycle through information pages, messages and clock
- Access the configuration pages
- Accept any changes made in the configuration pages.

**OPERATING PROCEDURES**

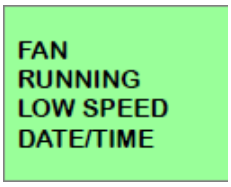
The following procedures can be undertaken using the touch buttons on the front of the control panel.




**Refresh Control Panel**

**Starting-up**

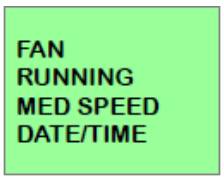
To start-up the fans press the START /SPEED UP button. The fans will start-up in the LOW SPEED and the following screen is displayed:



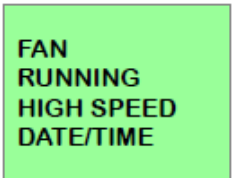

Screen Display - FAN LOW SPEED

**Increasing the Speed of the Fans**

To increase the speed of the fans from the LOW SPEED, press the START /SPEED UP button again. The speed of the fans will incraese to the MED & HIGH SPEED.




Screen Display - FAN MED SPEED




Screen Display - FAN HIGH SPEED

**Decreasing the Speed of the Fans**

To decrease the speed of the fans from the MED & HIGH SPEED, press the SPEED DOWN button again. The speed of the fans will decraese from HIGH to MED SPEED or MED to LOW SPEED.

**Muting an Active Alarm**

To mute an active alarm sound, press the MUTE button.

**Accessing the Information Screens**

The operator can access the following messages:

- System status
- Fan speed
- Filter status.

**Note:** Only active messages are shown

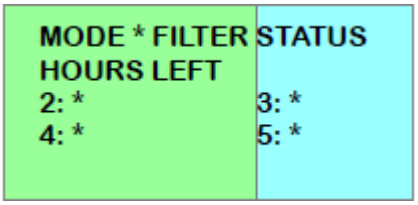
1. To access the information screens, press the ◄ ► arrow buttons.
2. To cycle through messages and clock screens, press the ▲ ▼ arrow buttons.

**Accessing the "Configuration" Screen from the "Date/Time" Screen**

1. To access the "Configuration" screen from the "Date/Time" screen, press the ESC button. The operator can make changes from the "Configuration" screen as necessary.
2. To save changes made from the "Configuration" screen, press the ESC button.
3. To cancel changes made from the "Configuration" screen, press the ESC button.

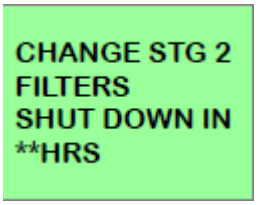
**Filter Status Screen**

1. From normal operating mode, select the filter status screen by pressing the ▼ arrow. The following scrolling text is displayed:



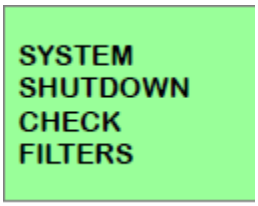

**Screen Display - FILTER STATUS HOURS LEFT**

2. When the filters become dirty, the system will display a countdown timer warning screen. The countdown timer warning screen shows which stage filters require changing and also gives a time (in hours) when the system will shut down:



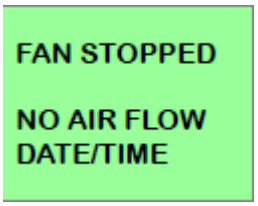

**Screen Display - FILTER STATUS HOURS LEFT**

If the stage filters are not changed during the time (in hours) shown on the countdown timer warning screen, then the system will SHUT DOWN and the following screen is displayed.




**Screen Display - SYSTEM SHUTDOWN CHECK FILTERS**

If an air flow pressure switch has been installed and the air pressure drops in the filter bank, the following screen is displayed:



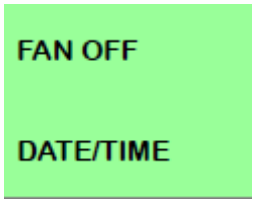

**Screen Display - FAN STOPPED NO AIR FLOW**

Refer to Preventive Maintenance for remove and replace procedures for stage filters which require cleaning or replacing.

**Shutting-down**

To shut-down the fans, press the 

button. The fans will stop and the following screen is displayed:




**Screen Display - FAN OFF**

**RESETTING THE FILTER OPERATIONAL HOURS**

The following procedures show how to stop the fans, remove and replace the stage filters which have become dirty and reset the filter operational hours:

1. Shut-down the fans by pressing the STOP button. The fans will stop.
2. Remove the stage filters which are displayed on the screen (CHANGE STAGE 2 FILTERS is given in the above example). Refer to the following remove procedures as necessary:

- Removing Stage 2 Filters
- Removing Stage 3 Filters
- Removing Stage 4 Filters
- Removing Stage 5 Carbon Cells

3. Replace the stage filters. Refer to the following replace procedures as necessary:

- Replacing Stage 2 Filters
- Replacing Stage 3 Filters
- Replacing Stage 4 Filters
- Replacing Stage 5 Carbon Cells

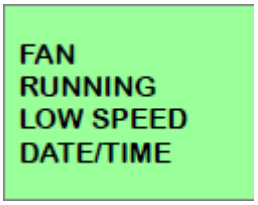
4. Access the filter stage reset panel by opening the hinged access panels at the lower front of the Services Tower.
5. To reset the stage filter which has been changed, press and hold the applicable reset button on the front of the filter stage reset panel.

**Note:** The filter stages are given below the black reset button as 2, 3, 4 & 5.




**Filter Stage Reset Panel - FILTERS RESET**

6. Close the hinged access panels at the lower front of the Services Tower.
7. To start-up the fans press the START /SPEED UP button. The fans will start-up in the LOW SPEED and the following screen is displayed:




**Screen Display - FAN LOW SPEED**

**MAINTENANCE**

**Introduction**

Warnings and Cautions use the following conventions:

**WARNING**:
IF ANY INFORMATION PROVIDED IN THIS OPERATION AND MAINTENANCE MANUAL IS NOT CLEAR YOU MUST STOP WORK AND CONTACT IMC BRITANNIA KITCHEN VENTILATION.

**WARNING**:
CLEANING AND MAINTENANCE MUST ONLY BE UNDERTAKEN BY COMPETENT PERSONNEL ONCE ALL EQUIPMENT SUCH AS OVENS, GRILLS AND FYERS ARE SWITCHED OFF AND ALL SURFACES HAVE SUFFICIENTLY COOLED.

**WARNING**:
FILTERS STAGES SHOULD ONLY BE REPLACED BY TRAINED OPERATIVES OR BRITANNIA KITCHEN VENTILATION SERVICE TEAM, CONTACT BRITANNIA FOR FURTHER DETAILS.

**WARNING**:
YOU SHOULD WEAR SUITABLE GRIPPING, CUT-RESISTANT WORK-GLOVES WHEN HANDLING AND CLEANING THE REFRESH UNIT.

**WARNING**:
ACCESS TO FILTERS FOR REMOVAL & REPLACEMENT WILL OFTEN MEAN REACHING ABOVE HEAD HEIGHT. YOU MUST USE SUITABLE ACCESS EQUIPMENT AND SAFE WORKING PROCEDURES.

**WARNING**:
YOU MUST WEAR SUITABLE RUBBER GLOVES WHEN CLEANING WITH ANY ACID SOLUTIONS. SPECIAL PRECAUTIONS ARE NECESSARY WITH OXALIC ACID. SOLVENTS SHOULD NOT BE USED IN ENCLOSED PLACES.

**WARNING**:
USE SUITABLE AND APPROVED EQUIPMENT WHEN WORKING AT HEIGHT.
WARNING:
IF THE INTERNAL SURFACES OF THE SYSTEM ITSELF ARE NOT REGULARLY AND THOROUGHLY CLEANED, THEN THE RESIDUAL ODOURS OF DEPOSITED GREASE THROUGHOUT THE SYSTEM WILL BE DETECTABLE IN THE RETURN SUPPLY AIR FLOW RE-ENTERING THE ROOM SPACE.

**CAUTION**:
If primary filtration is not regularly cleaned & maintained, then hygiene and fire risks are created down-stream.

**CAUTION**:
The particulate filters are positioned to protect the fan and carbon filters. If they are not monitored and replaced regularly, then the life-span of the carbon filters will be drastically reduced and the fan will become grease loaded and could start to run out of balance causing long-term damage to bearings and impeller.

**Equipment, Tools, Consumables and PPE**
**Equipment**

- Commercial Dishwasher
- Suitable and approved access equipment
- Bucket.

**Tools**

- Allen key (6 mm)
- Small flat bladed screwdriver.

**Consumables**

- Lint free cleaning cloth
- Clean dry soft cloth
- Mild detergent (Fairy Liquid)
- Commercial heavy duty detergent
- 100% isopropyl alcohol
- Clean warm water
- Suitable Acetone and Alcohol
- Suitable Abrasive free stainless steel cleaning cream
- Oxalic Acid
- Suitable swab
- Suitable impregnated nylon pads
- Suitable scurf's dressed with iron free abrasives
- Suitable container to drain grease into.

**PPE**

- Kevlar gloves (for general equipment handling and cleaning)
- Rubber gloves (when cleaning using acid, alcohol and acetone).

**PREVENTIVE MAINTENANCE**
**Preventive Maintenance Overview**

Britannia canopies and their components are designed to be easy to clean providing that cleaning intervals are not left too long. When too long a period is left between cleans, grease will become baked-on and require special attention. An enhanced aesthetic appearance will be achieved if the cleaned surface is finally wiped dry.

No grease filtration is 100% efficient and therefore there will always be a certain amount of grease carried through the filters and deposited on the internal surfaces of the filter housings, plenums and ductwork.

The amount of grease carried through any filtration system will depend very much on the type of cooking and ingredients used. If left unattended, this layer of grease on the non-visible surfaces of the Refresh Unit creates both hygiene and fire risks.

Regular inspections are recommended and should cover both the internal and external Refresh Unit surfaces, especially non-visible ones.

We strongly recommend that the end user should carry-out detailed in-house risk assessments for all aspects of maintaining Refresh Units.

When handling any components of a canopy, it is imperative that operatives wear proper, gripping, cut-resistant work-gloves for protection against metal edges, as well as the detergents and cleaning agents used. No matter how well finished a fabrication may be, it is easy to cut soft water-soaked skin during the cleaning process.

Canopies and their components by their very nature will have a coating of grease and therefore will be slippery and difficult to handle. Suitable gloves can be obtained easily through most suppliers of personal protective equipment. Access to filters for removal & replacement will often mean reaching above head height and as such, suitable access equipment and or safe working procedures may be required.

The life expectancy and efficiency of each component part of the Refresh Unit, relies upon careful maintenance of the entire system. If the maintenance of one component is neglected, then it can have a serious knock-on effect to other parts of the system rendering them useless or creating permanent damage.

In essence, good maintenance costs time and money and must be budgeted for. However, a lack of maintenance will inevitably cost many times as much in the longer term; due to repair bills, replacement parts, operator discomfort and occupational health risks.

A properly controlled and planned maintenance schedule must be implemented immediately in order that maximum system efficiency is achieved at all times so minimising occupational health risks to operatives. This will also reduce the likelihood of nuisance odours and fumes occurring.

**Preventive Maintenance Schedule**

The frequency of preventive maintenance will depend upon:

- The type of establishment
- The level of output
- The type of cooking
- The regularity and duration of cooking.

Level of output and establishment types have been categorised as follows:

- Light: pub & bar food, small cafes, coffee shops and tea shops
- Light/medium: schools, hospitals, care homes, office and workplace kitchens
- Medium: Italian, French, hotel, pub, pizza and supermarket restaurants
- Medium/high: small, low output fast food restaurants, steak houses, kebab and chip shops
- High: large, high output fast food, Mexican, Oriental and Asian restaurants
- Very high: food production factories.

Deciding upon when cleaning should take place and how often, is mostly subjective and responsibility is ultimately with the manager of the facility.

Regular inspections are recommended and should cover both the internal and external canopy surfaces. As a very rough guide to cleaning schedules please refer to the following tables:

Cleaning and maintenance of kitchen canopies and associated items should only be carried out by suitably skilled and trained operatives, in the absence of such operatives a specialist sub-contractor should be engaged and retained for the purpose. If in-house staff members are to be used, they will require training in monitoring, testing and handling of the various components.

Failure to properly maintain the Refresh unit and its components will invalidate any warranties or guarantees.

Special care should be taken over the disposal of non-cleanable items to ensure that all relevant legislation is considered and adhered to.

The table below details the corrective maintenance procedures and frequencies required (Weeks/Hours) for all Refresh units:

**Note:** The above daily, weekly & monthly time intervals assume 6 hours cooking per day and cooking on 5 days per week.

| Equipment | Preventive Maintenance Frequency | | | | | |
|---|---|---|---|---|---|---|
| | Level of Output | | | | | |
| | Light | Light/ Medium | Medium | Medium/ High | High | Very High |
| Cleaning Stage 1 Baffle Filters | 7 Days | 7 Days | 5 Days | 3 Days | 1 Days | 1 Days |
| Cleaning Grease Collection Drawers | 7 Days | 7 Days | 5 Days | 3 Days | 1 Days | 1 Days |
| Cleaning Refresh Unit Lighting | 7 Days | 7 Days | 5 Days | 5 Days | 5 Days | 5 Days |
| Cleaning Down the Refresh Unit | 7 Days | 7 Days | 5 Days | 5 Days | 5 Days | 5 Days |
| Deep Cleaning the Refresh Unit Internal Surfaces of the Canopy and Tower | 6 Months | 6 Months | 6 Months | 5 Months | 3 Months | 3 Months |
| Cleaning the Service Tower Internal Ductwork | 12 Months | 12 Months | 8 Months | 6 Months | 4 Months | 3 Months |
| Cleaning Stainless Steels | | | | | | |
| Routine Surface Cleaning | Non-scheduled (as required depending upon output). Clean all stainless steel surfaces when it is dirty in order to restore its original appearance] | | | | | |
| Cleaning Fingerprints | | | | | | |
| Cleaning Stubborn Stains and Discolouration | | | | | | |
| Cleaning Oil and Grease Marks | | | | | | |
| Cleaning Corrosion | | | | | | |
| Replacing Stage 2 G4 Filters | 1 Week (30 hours) | 1 Week (30 hours) | 2-3 days (18 hours) | 2-3 days (18 hours) | 1 day (6 hours) | 1 day (6 hours) |
| Replacing Stage 3 F6 Filters | 6 months (720 hours) | 5 months (600 hours) | 4 months (480 hours) | 3 months (360 hours) | 2 months (240 hours) | 1 month (120 hours) |
| Replacing Stage 4 HEPA H10 Filters | 6 months (720 hours) | 5 months (600 hours) | 4 months (480 hours) | 3 months (360 hours) | 2 months (240 hours) | 1 month (120 hours) |
| Replacing Stage 5 Carbon Filter Cells | 12 months (1440 hrs) | 9 months (1080 hrs) | 6 months (720 hours) | 4 months (480 hours) | 3 months (360 hours) | 3 months (360 hours) |
| Replacing Stage 6 Disposable Synthetic Media Pads | 6 months | 6 months | 6 months | 6 months | 6 months | 6 months |

**Preventive Maintenance Procedures**

Refer to the following procedures as necessary:

- Cleaning Stage 1 Baffle Type Grease Filters
- Removing Grease from the Canopy
- Cleaning the Lighting
- Cleaning Down Visible Refresh Unit Surfaces
- Deep Cleaning the Refresh Unit
- Cleaning the Service Tower Internal Ductwork
- Cleaning Stainless Steel:
  - Routine Surface Cleaning
  - Cleaning Fingerprints
  - Cleaning Stubborn Stains and Discolouration
  - Cleaning Oil and Grease Marks
  - Cleaning Corrosion
  - Removing Scratches on Brush Satin Finishes.

**WARNING**:

CLEANING AND MAINTENANCE MUST ONLY BE UNDERTAKEN BY COMPETENT PERSONNEL ONCE ALL EQUIPMENT SUCH AS OVENS, GRILLS AND FYERS ARE SWITCHED OFF AND ALL SURFACES HAVE SUFFICIENTLY COOLED.

**WARNING**:

ACCESS TO FILTERS FOR REMOVAL & REPLACEMENT WILL OFTEN MEAN REACHING ABOVE HEAD HEIGHT. YOU MUST USE SUITABLE ACCESS EQUIPMENT AND SAFE WORKING PROCEDURES.

**WARNING**

IF THE INTERNAL SURFACES OF THE SYSTEM ITSELF ARE NOT REGULARLY AND THOROUGHLY CLEANED, THEN THE RESIDUAL ODOURS OF DEPOSITED GREASE THROUGHOUT THE SYSTEM WILL BE DETECTABLE IN THE RETURN SUPPLY AIR FLOW RE-ENTERING THE ROOM SPACE.

**Cleaning Stage 1 Baffle Type Grease Filters**

**CAUTION**:
If primary filtration is not regularly cleaned & maintained, then hygiene and fire risks are created down-stream.

These are high efficiency Britstream baffle-type grease filters. Filter cleaning should only take place when cooking operations are suspended.

1. Switch **OFF** and isolate the electrical power supply.

**WARNING**:
USE SUITABLE AND APPROVED EQUIPMENT WHEN WORKING AT HEIGHT.

2. Safely position suitable access equipment. Remove the grease filter by gripping and lifting the panel upward and then tilting/lowering the bottom edge forward and clear of the housing. Refer to the picture below.



3. Using a commercial dishwasher, clean the grease filter.
4. Replace the grease filter making sure that the panel is the right way around with any framework drain holes at the front, lowest edge.
5. Switch **ON** the electrical power supply.

**Removing Grease from the Canopy**

**WARNING**:
USE SUITABLE AND APPROVED EQUIPMENT WHEN WORKING AT HEIGHT.



**Grease Drainage Hole**

1. Safely position suitable access equipment. Place a suitable container underneath the slot head drain screw.
2. To empty the grease into the container, remove the slot head drain screw from the grease drainage hole.
3. Once the grease has been removed, dispose of the container.
4. Replace the slot head screw back into the grease drainage hole.

**Cleaning the Lighting**

Refresh Ultima canopies are fitted with LED type lights.
Clean the lighting as follows:

1. Switch **OFF** the Refresh Unit lighting.
2. Switch **OFF** and isolate the electrical power supply.
3. Allow the LED lighting to cool down.

**WARNING**:
USE SUITABLE AND APPROVED EQUIPMENT WHEN WORKING AT HEIGHT.

**WARNING**:
YOU SHOULD WEAR SUITABLE GRIPPING, CUT-RESISTANT WORK-GLOVES WHEN HANDLING AND CLEANING THE REFRESH UNIT.

4. Safely position suitable access equipment. Using the cloth moistened with the water and mild detergent, wipe the diffuser clean.
5. Using a clean cloth moistened with the water, wipe the diffuser again to remove the detergent.
6. Switch **ON** the electrical power supply.
7. Switch **ON** the Refresh Unit lighting.

**Cleaning Down Visible Refresh Unit Surfaces**

1. Switch **OFF** the Refresh Unit lighting
2. Switch **OFF** and isolate the electrical power supply.
3. Allow the stainless steel surface to cool.

**WARNING**:

USE SUITABLE AND APPROVED EQUIPMENT WHEN WORKING AT HEIGHT.

WARNING:

YOU SHOULD WEAR SUITABLE GRIPPING, CUT-RESISTANT WORK-GLOVES WHEN HANDLING AND CLEANING THE REFRESH UNIT.

4. Safely position suitable access equipment. Using the cloth moistened with the mild detergent, clean all surfaces.
5. Using the bucket and warm water, moisten the clean cloth and rinse all surfaces.
6. Using a clean dry soft cloth, wipe all surfaces dry.
7. Switch **ON** the electrical power supply.
8. Switch **ON** the Refresh Unit lighting.

**Deep Cleaning the Refresh Unit**

Grease can be deposited on the non-visible inside surfaces of the Refresh Unit. When allowed to build up, this can increase the risk of fire and reduce the hygiene standards of the equipment. A deep clean procedure is recommended to reduce this build-up of grease.

1. Switch **OFF** the Refresh Unit lighting
2. Switch **OFF** and isolate the electrical power supply.
3. Allow the stainless steel surfaces to cool.

**WARNING**:

USE SUITABLE AND APPROVED EQUIPMENT WHEN WORKING AT HEIGHT.

WARNING:

YOU SHOULD WEAR SUITABLE GRIPPING, CUT-RESISTANT WORK-GLOVES WHEN HANDLING AND CLEANING THE REFRESH UNIT.

4. Safely position suitable access equipment. Using the cloth moistened with the Acetone or the Alcohol, clean all surfaces to remove oil and grease.
5. Using the bucket and warm water, moisten the clean cloth and rinse all surfaces.
6. Using a clean dry soft cloth, wipe all surfaces dry.
7. Switch **ON** the electrical power supply.
8. Switch **ON** the Refresh Unit lighting.

**Cleaning the Service Tower Internal Ductwork**
Clean the internal ductwork of the Refresh unit. Refer to Section Cleaning Stainless Steel - Cleaning Oil and Grease Marks below.

**Cleaning Stainless Steel** In general, stainless steel cleaning is carried out to restore the original surface appearance to prevent corrosion and maintain hygiene standards.

All grades of stainless steel will stain and discolour due to surface deposits and can never be accepted as completely maintenance free. In order to achieve maximum corrosion resistance, the surface of the stainless steel must be kept clean.

Refer to the following procedures in this section as necessary:

- Routine Surface Cleaning
- Cleaning Fingerprints
- Cleaning Stubborn Stains and Discolouration
- Cleaning Oil and Grease Marks
- Cleaning Corrosion
- Removing Scratches on Brush Satin Finishes.

**Routine Surface Cleaning**
Switch OFF and isolate the electrical power supply.
Allow the stainless steel surface to cool.

**WARNING**:
CLEANING AND MAINTENANCE MUST ONLY BE UNDERTAKEN BY COMPETENT PERSONNEL ONCE ALL EQUIPMENT SUCH AS OVENS, GRILLS AND FYERS ARE SWITCHED OFF AND ALL SURFACES HAVE SUFFICIENTLY COOLED.

**WARNING**:
USE SUITABLE AND APPROVED EQUIPMENT WHEN WORKING AT HEIGHT.

**WARNING**:
YOU SHOULD WEAR SUITABLE GRIPPING, CUT-RESISTANT WORK-GLOVES WHEN HANDLING AND CLEANING THE REFRESH UNIT.

3. Safely position suitable access equipment. Using the cloth moistened with the mild detergent, clean all surfaces.
4. Using the bucket and warm water, moisten the clean cloth and rinse all surfaces.
5. Using a clean dry soft cloth, wipe all surfaces dry.
6. Switch ON the electrical power supply.

**Cleaning Fingerprints**

1. Switch **OFF** and isolate the electrical power supply.
2. Allow the stainless steel surface to cool.

**WARNING**:
CLEANING AND MAINTENANCE MUST ONLY BE UNDERTAKEN BY COMPETENT PERSONNEL ONCE ALL EQUIPMENT SUCH AS OVENS, GRILLS AND FYERS ARE SWITCHED OFF AND ALL SURFACES HAVE SUFFICIENTLY COOLED.

**WARNING**:
USE SUITABLE AND APPROVED EQUIPMENT WHEN WORKING AT HEIGHT.

**WARNING**:
YOU SHOULD WEAR SUITABLE GRIPPING, CUT-RESISTANT WORK-GLOVES WHEN HANDLING AND CLEANING THE REFRESH UNIT.

3. Safely position suitable access equipment. Using the cloth and mild detergent, clean all surfaces.
4. Using the bucket and warm water, moisten the clean cloth and rinse all surfaces.

**Note:** An organic solvent such as Acetone and Alcohol can also be used

5. Using a clean dry soft cloth, wipe all surfaces dry.
6. Switch **ON** the electrical power supply.

**Cleaning Stubborn Stains and Discolouration**

1. Switch **OFF** and isolate the electrical power supply.
2. Allow the stainless steel surface to cool.

**WARNING**:
CLEANING AND MAINTENANCE MUST ONLY BE UNDERTAKEN BY COMPETENT PERSONNEL ONCE ALL EQUIPMENT SUCH AS OVENS, GRILLS AND FYERS ARE SWITCHED OFF AND ALL SURFACES HAVE SUFFICIENTLY COOLED.

**WARNING**:
USE SUITABLE AND APPROVED EQUIPMENT WHEN WORKING AT HEIGHT.
WARNING:
YOU SHOULD WEAR SUITABLE GRIPPING, CUT-RESISTANT WORK-GLOVES WHEN HANDLING AND CLEANING THE REFRESH UNIT.

3. Safely position suitable access equipment. Using the cloth moistened with the cleaning cream, clean all surfaces.
4. Using the bucket and warm water, moisten the clean cloth and rinse all surfaces.
5. Using a clean dry soft cloth, wipe all surfaces dry.
6. Switch **ON** the electrical power supply.

**Cleaning Corrosion**

1. Switch **OFF** and isolate the electrical power supply.
2. Allow the stainless steel surface to cool.

**WARNING**:

CLEANING AND MAINTENANCE MUST ONLY BE UNDERTAKEN BY COMPETENT PERSONNEL ONCE ALL EQUIPMENT SUCH AS OVENS, GRILLS AND FYERS ARE SWITCHED OFF AND ALL SURFACES HAVE SUFFICIENTLY COOLED.

**WARNING**:

USE SUITABLE AND APPROVED EQUIPMENT WHEN WORKING AT HEIGHT.

WARNING:

YOU MUST WEAR SUITABLE RUBBER GLOVES WHEN CLEANING WITH ANY ACID SOLUTIONS. SPECIAL PRECAUTIONS ARE NECESSARY WITH OXALIC ACID. SOLVENTS SHOULD NOT BE USED IN ENCLOSED PLACES.

3. Safely position suitable access equipment. Using the rubber gloves and the swab moistened with the oxalic acid, wet the corroded surface and allow to the acid to stand for 14 to 20 minutes.
4. Using the rubber gloves and clean warm water, wash the oxalic acid away.

**WARNING**:

YOU SHOULD WEAR SUITABLE GRIPPING, CUT-RESISTANT WORK-GLOVES WHEN HANDLING AND CLEANING THE REFRESH UNIT.

5. Using the cloth moistened with the cleaning cream, clean the surfaces where the oxalic acid was applied.

**WARNING**:

YOU SHOULD WEAR SUITABLE GRIPPING, CUT-RESISTANT WORK-GLOVES WHEN HANDLING AND CLEANING THE REFRESH UNIT.

6. Using the bucket and warm water, moisten the clean cloth and rinse the surfaces where the cleaning cream was applied.
7. Using a clean dry soft cloth, wipe the surfaces dry.
8. Switch **ON** the electrical power supply.

**Removing Scratches on Brush Satin Finishes**

1. Switch **OFF** and isolate the electrical power supply.
2. Allow the stainless steel surface to cool.

**WARNING**:

CLEANING AND MAINTENANCE MUST ONLY BE UNDERTAKEN BY COMPETENT PERSONNEL ONCE ALL EQUIPMENT SUCH AS OVENS, GRILLS AND FYERS ARE SWITCHED OFF AND ALL SURFACES HAVE SUFFICIENTLY COOLED.

**WARNING**:

USE SUITABLE AND APPROVED EQUIPMENT WHEN WORKING AT HEIGHT.

**WARNING**:

YOU SHOULD WEAR SUITABLE GRIPPING, CUT-RESISTANT WORK-GLOVES WHEN HANDLING AND CLEANING THE REFRESH UNIT.

3. Safely position suitable access equipment. Treat surface scratches as follows:

a. For light surface scratches; use the nylon pads to gently remove the scratches.

b. For deep surface scratches; use the scurf's in the direction of polishing to remove the scratches.

4. Switch **ON** the electrical power supply.

**Recommended Cleaning and Maintenance Contractors**

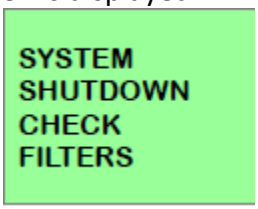
Britannia can provide a range of maintenance services, from a full maintenance contract including cleaning and replacement of filters, to individual service calls and onsite training.

**Maintenance of Fire Suppression Systems (Where Installed)**

Contact details of appropriate companies can be supplied if required.

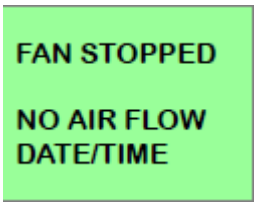
**FAULT FINDING**
**Fault Finding Procedures**

Filter Status Screens
When the stage filters become dirty the operation of the unit is reduced. If the stage filters are not changed during the time (in HRS) shown on the countdown timer warning screen, then the system will SHUT DOWN and the following screen is displayed.




**Screen Display - SYSTEM SHUTDOWN CHECK FILTERS**

If an air flow pressure switch has been installed and the air pressure drops in the filter bank, the following screen is displayed:




**Screen Display - FAN STOPPED NO AIR FLOW**

The following procedures show how to change and reset the filters when the system has shut down:

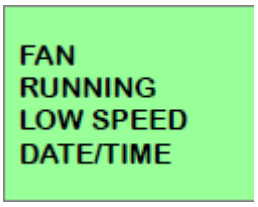
1. Remove the stage filters which are displayed on the screen. Refer to the following remove and replace procedures:
   - Removing Stage 2 Filters
   - Removing Stage 3 Filters
   - Removing Stage 4 Filters
   - Removing Stage 5 Carbon Cells
2. Remove the stage filters which are displayed on the screen. Refer to the following remove and replace procedures:
   - Replacing Stage 2 Filters
   - Replacing Stage 3 Filters
   - Replacing Stage 4 Filters
   - Replacing Stage 5 Carbon Cells
3. Access the filter stage reset panel by opening the hinged access panels at the lower front of the Services Tower.
4. To reset the stage filter which has been changed, press and hold the applicable reset button on the front of the filter stage reset panel.

**Note**: The filter stages are given below the black reset button as 2, 3, 4 & 5




**Filter Stage Reset Panel - FILTERS RESET**

- Close the hinged access panels at the lower front of the Services Tower.
- To start-up the fans press the START /SPEED UP button. The fans will start-up in the LOW SPEED and the following screen is displayed:




**Screen Display - FAN LOW SPEED**

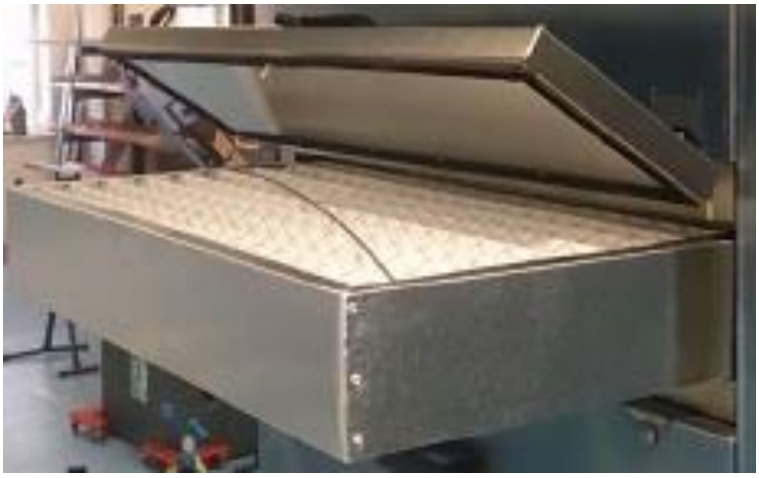
**MAINTENANCE POLICY**

Only suitably trained and competent personnel must carry out maintenance.

**Removing Stage 2 Filters**

The filter is mounted horizontally within the rear section of the Services Tower.

1. Switch OFF and isolate the electrical power supply.
2. Access the Stage 2 filters panels by unlocking the side access panel of the Services Tower and slide out the Stage 2 filter tray. Refer to the picture below.



**Opening the Access Panel and Removing the Stage 2 filter**

3. Using your hand, unhook the securing clip from the top of the filter pad.
4. Using your hand, remove the Stage 2 filter pad.
5. Dispose of the old filter pad.

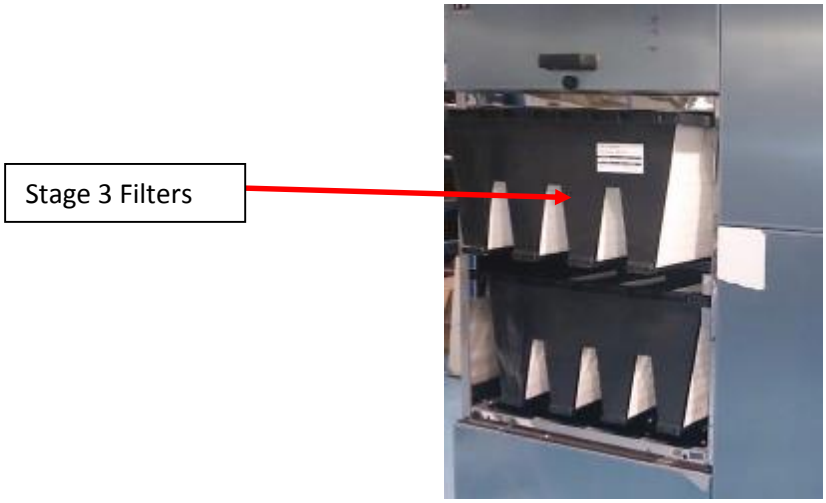
**Removing Stage 3 Filters**

**CAUTION**:

The particulate filters are positioned to protect the fan and carbon filters. If they are not monitored and replaced regularly, then the life-span of the carbon filters will be drastically reduced and the fan will become grease loaded and could start to run out of balance causing long-term damage to bearings and impeller.

The filter is mounted horizontally within the side access panel of the Services Tower.

1. Switch **OFF** and isolate the electrical power supply.
2. Access the Stage 3 filters panels by unlocking the side access panel of the Services Tower. Refer to the picture below.




**Accessing the Stage 3 filters**

3. Remove each of the Stage 3 filters by sliding the panel out horizontally between its guide rails.
4. Dispose of the old filters.

**Removing Stage 4 Filters**

**CAUTION**:

The particulate filters are positioned to protect the fan and carbon filters. If they are not monitored and replaced regularly, then the life-span of the carbon filters will be drastically reduced and the fan will become grease loaded and could start to run out of balance causing long-term damage to bearings and impeller.

The filter is mounted horizontally within the side access panel of the Services Tower.

1. Switch **OFF** and isolate the electrical power supply.
2. Access the Stage 4 filters panels by unlocking the side access panel of the Services Tower.
3. Remove each of the Stage 4 filter panels by sliding the panel out horizontally between its guide rails. Refer to the picture below.




**Access the Stage 4 Filters Panels**

4. Dispose of the old filter panels.

**Removing Stage 5 Carbon Cells**

The filter is mounted within the front section of the Services Tower.

1. Switch **OFF** and isolate the electrical power supply.
2. Access the Stage 5 carbon cells by unlocking the upper front access panel of the Services Tower.
3. Remove each of the Stage 5 carbon cells by sliding the individual vertical cells out horizontally between their guide rails. Refer to the picture below.



**Removing Each of the Stage 5 Carbon Cells**

4. Dispose of the spent loose carbon granules inside each cell.

**Removing an LED Lamp**

1. Switch OFF the canopy lighting and isolate the power supply.

**WARNING**:
USE SUITABLE AND APPROVED EQUIPMENT WHEN WORKING AT HEIGHT.

2. Safely position suitable access equipment. Using your fingers, move the bezel away from the surface of the canopy then gently pull the fitting down.



**Moving the Bezel Away from the Canopy**

3. Carefully squeeze the two spring clips above the bezel and gently pull the lamp down from the canopy.



**Squeezing the Spring Clips**



**Removing the Fitting from the Canopy**

4. Gently pull the bezel from the fitting to access the lamp inside.



**Pulling the Bezel from the Fitting**





**Bezel Removed** **Lamp Removed**

5. Gently twist and pull the lamp from its fitting.
6. Switch **ON** the electrical power supply.
7. Reset the filter operational hours. Refer to Section Resetting the Filter Operational Hours.
8. Check the unit is operating correctly.

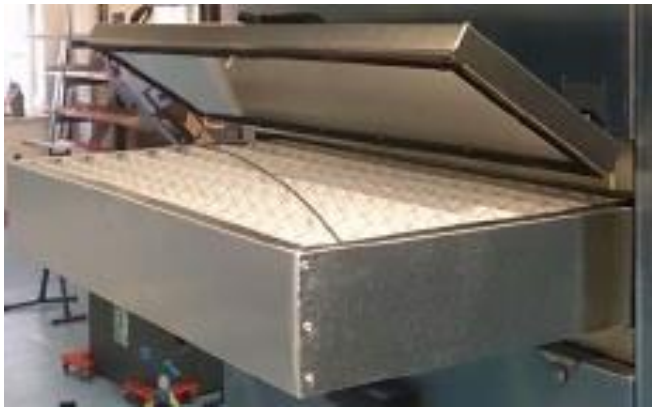
**REPLACEMENT PROCEDURES**

Refer to the following procedures as necessary:

- Replacing Stage 2 Filters
- Replacing Stage 3 Filters
- Replacing Stage 4 Filters
- Replacing Stage 5 Carbon Cells
- Replacing an LED Lamp

**Replacing Stage 2 Filters**

- Using your hand, replace the Stage 2 filter pad inside the filter panel.
- Using your hand, hook the securing clip over the top of the filter pad.
- Replace the Stage 2 filter pad by sliding the panel in horizontally between its guide rails. Refer to the picture below.

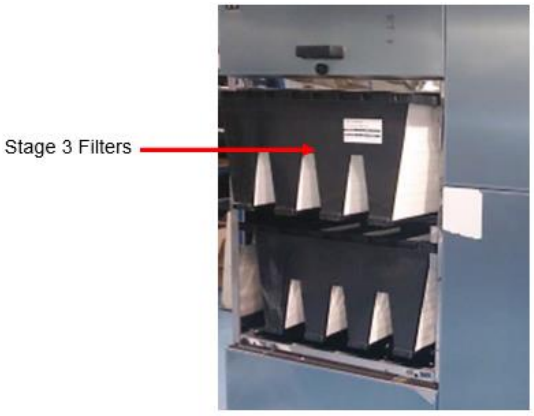


**Opening the Access Panel and Replacing the Stage 2 filter**

- Switch ON the electrical power supply.
- Reset the filter operational hours. Refer to Section 3.3 Resetting the Filter Operational Hours.
- Check the unit is operating correctly.

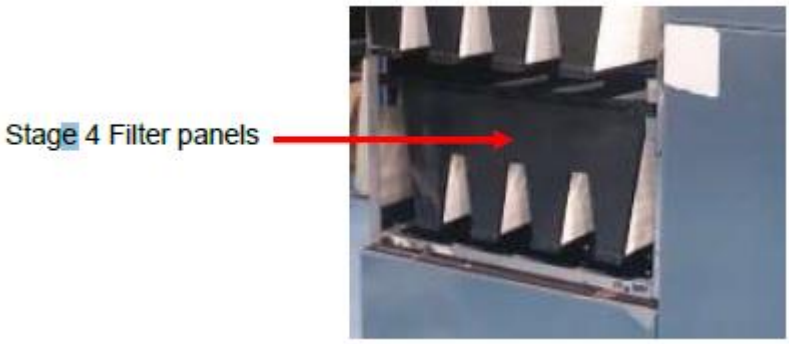
**Replacing Stage 3 Filters**

- Replace each of the Stage 3 filter panels by sliding the panel in horizontally between its guide rails. The filter must be mounted above the 4$^{th}$ Stage filter. Refer to the picture below.



## Accessing the stage 3 filters

### Replacing Stage 4 Filters




***Replacing the Stage 4 Filters Panels below the Stage 4 Filters***

**Step 1:** Replace each of the Stage 4 filter panels by sliding the panel in horizontally between its guide rails. The filters must be mounted below the 3rd Stage filters. Refer to the picture below.
**Step 2:** Close the side access panel of the Services Tower and lock.
**Step 3:** Switch **ON** the electrical power supply.
**Step 4:** Reset the filter operational hours.as outlined previously
**Step 5:** Check the unit is operating correctly.

### Replacing Stage 5 Carbon Cells



***Replacing Each of the Stage 5 Carbon Cells***

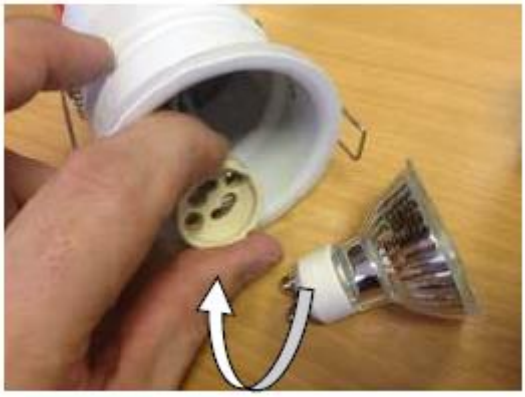
**Step 1:** Using the correct loose granule carbon media, re-fill the cells.
**Step 2:** Replace each of the Stage 5 carbon cells by sliding the individual vertical cells in horizontally between their guide rails. Refer to the picture below.
**Step 3:** Close the upper front access panel of the Services Tower and lock.
**Step 4:** Switch **ON** the electrical power supply.
**Step 5:** Reset the filter operational hours.0
**Step 6:** Check the unit is operating correctly.

**Replacing an LED Lamp**

**WARNING:**

**USE SUITABLE AND APPROVED EQUIPMENT WHEN WORKING AT HEIGHT.**

**Step 1:** Gently twist and push the lamp into its fitting.



**Refitting the Lamp to its Fitting**

**Step 2:** Gently push the bezel into the fitting.



**Pushing the Bezel Back into the Fitting**

**Step 3:** Carefully squeeze the two spring clips above the bezel and gently push the lamp up and inside the canopy.



**Squeezing the Clips to Replace the Lamp to the Canopy**

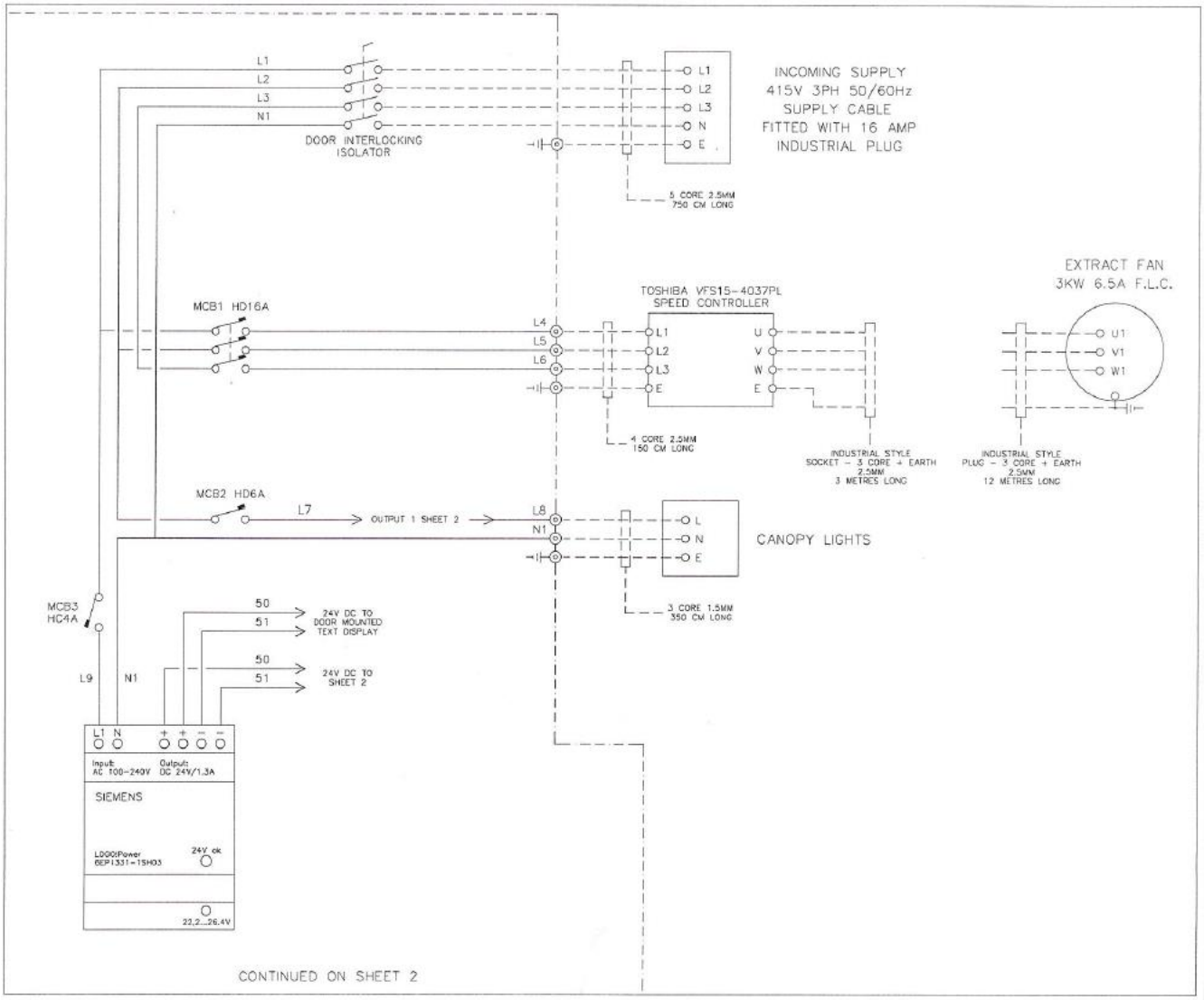
**Step 4:** Using your fingers, push the bezel upwards so it is flush to the surface of the canopy.

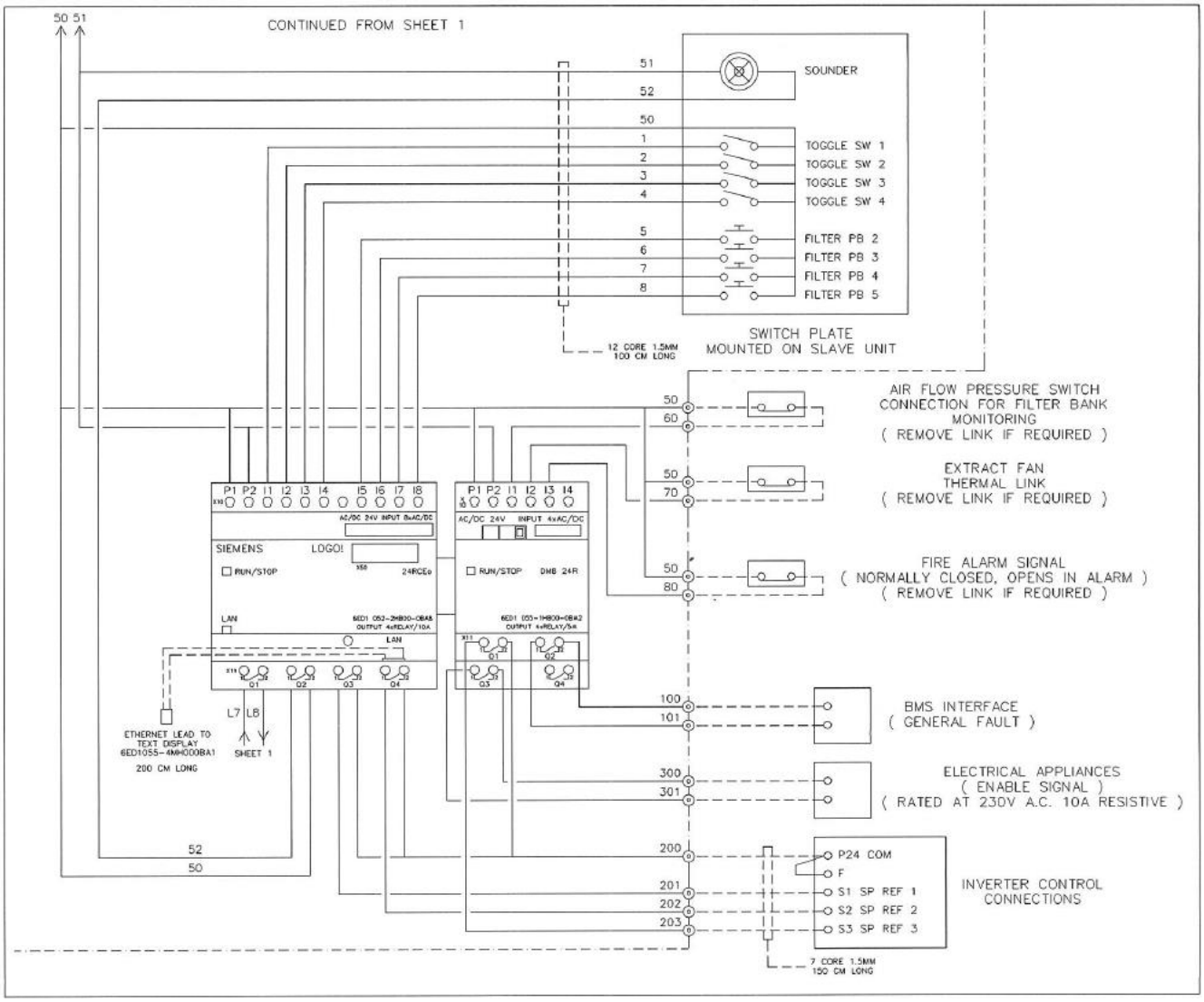


**Pushing the Lamp Flush to the Canopy**

**Step 5:** Using the clean dry cloth, remove any finger marks from the bezel glass.
**Step 6:** Switch **ON** the power supply.
**Step 7:** Switch **ON** the canopy lighting.

**WIRING DIAGRAMS**




50 51
CONTINUED FROM SHEET 1
51
52
SOUNDER
50
1
2
3
4
TOGGLE SW 1
TOGGLE SW 2
TOGGLE SW 3
TOGGLE SW 4
5
6
7
8
FILTER PB 2
FILTER PB 3
FILTER PB 4
FILTER PB 5
12 CORE 1.5MM
100 CM LONG
SWITCH PLATE
MOUNTED ON SLAVE UNIT
50
60
AIR FLOW PRESSURE SWITCH
CONNECTION FOR FILTER BANK
MONITORING
( REMOVE LINK IF REQUIRED )
50
70
EXTRACT FAN
THERMAL LINK
( REMOVE LINK IF REQUIRED )
50
80
FIRE ALARM SIGNAL
( NORMALLY CLOSED, OPENS IN ALARM )
( REMOVE LINK IF REQUIRED )
P1 P2 I1 I2 I3 I4 I5 I6 I7 I8
P1 P2 I1 I2 I3 I4
SIEMENS
LOGO!
RUN/STOP
24RCEo
RUN/STOP
DM8 24R
LAN
LAN
Q1
Q2
Q3
Q4
ETHERNET LEAD TO
TEXT DISPLAY
6ED1055-4MH00BA1
200 CM LONG
L7 L8
SHEET 1
100
101
BMS INTERFACE
( GENERAL FAULT )
300
301
ELECTRICAL APPLIANCES
( ENABLE SIGNAL )
( RATED AT 230V A.C. 10A RESISTIVE )
52
50
200
201
202
203
P24 COM
F
S1 SP REF 1
S2 SP REF 2
S3 SP REF 3
INVERTER CONTROL
CONNECTIONS
7 CORE 1.5MM
150 CM LONG

**SPARES**

The following replacement parts may be purchased from IMC Britannia Kitchen Ventilation when damaged or life expired for:

| Nomenclature | Additional Information | Small Service Tower | Large Service Tower |
|---|---|---|---|
| Stage 1 High efficiency Britstream baffle-type grease filter | N/A | **S100089** | **S100089** |
| Stage 2 G4 filter | N/A | **A26/025** (595x595x50mm) | **A26/025** (595x595x50mm) |
| Stage 3 F6 filter | N/A | **A26/018** (595x595x292mm) | **A26/018** (595x595x292mm)<br>**A26/021** (595x289x292mm) |
| Stage 4 HEPA H10 filter | N/A | **A26/019** (595x595x292mm) | **A26/019** (595x595x292mm)<br>**A26/022** (595x289x292mm) |
| Stage 5 Carbon cells | N/A | **A26/017** | **A26/017** |
| Stage 6 Return air supply diffuser pad media | Disposable pad media cut to suit diffuser size | N/A | N/A |
| Fan | N/A | **G96/076** | **G96/076** |

Down light size, type and wattage

| Lamp Diameter (mm) | Voltage (V) | Lamp Wattage (W) | Ingress Protection (IP) Rating |
|---|---|---|---|
| 87mm Ø | 240 | 9 | 65 |

**ORDERING SPARE PARTS**

In the event that spare parts or accessories need to be ordered, please always quote the SERIES AND SERIAL NUMBER of the machine. This is to be found on the rating plate located near the supply cable.
For installations outside the UK, please contact your supplier.

For information on IMC spares and service support (if applicable), please call IMC on +44 (0)1978 661155. Alternatively, contact us via email or fax:


| | |
|---|---|
| IMC Spares Desk | Fax: +44 (0)1978 667759 |
| E-mail: | spares@imco.co.uk |
| IMC Service Desk | Fax: +44 (0)1978 667766 |
| E-mail: | service@imco.co.uk |

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