KWI - Capture Jet™ hood combined with Water Wash technology

• HACCP* certified (PE-567-HM02I)
• 30 to 40% reduction in exhaust airflow rates thanks to the Capture Jet™ technology
• Automatic cleaning of the KSA grease filters and the exhaust plenum (Water Wash technology)
• Minimised maintenance requirement, reducing the work load for personnel cleaning the filters
• High-efficiency KSA multi-cyclone filters (UL, NSF and LPS 1263 classified)
• Prevention of the build-up of grease deposits, which pose a serious hygiene and fire hazard
• Equipped with Accuflow monitoring device, ensuring the hoods are running at designed airflows
• Water Wash control Cabinet equipped with Halton’s LCD Touch Screen
• Performance tested independently in accordance with the ASTM 1704 standard
• Exhaust airflow rates based on ASTM performance and a calculation method of the real heat loads
• Accurate and effective commissioning due to “ready to install” standard delivery packages
• Stainless steel construction with seamless design for improved hygiene and fire safety.

The KWI hood with the new generation of peripheral, vertical and horizontal Capture Jet™ technology is a highly efficient kitchen ventilation hood that removes contaminated air and excess heat emitted by cooking equipment. Overall, the system requires 30% to 40% less exhaust air volume than traditional hoods to remove an equal heat load.

The KWI kitchen hood automatically washes down the grease filters without the need for removal of the filters from the hood. The washing cycle is fully automatic and programmable for use in different operating conditions. The washing process can be manually overridden, when required.

KWI - Capture Jet™ Hood combined with Water Wash technology
Operation and description

Cooking equipment generates large plumes of hot air, loaded with grease particles, grease vapours, water, and odours. These plumes or convective flows (1) naturally rise toward the kitchen ceiling.

The combination of the peripheral, horizontal and vertical Capture Jets (2), allows convective flows to rise freely and be removed by the extraction plenum (4) as quickly as possible. The profile of the inside of the hood in association with the action of the Capture Jets allows effective containment of both regular and sudden outputs of smoke or steam. The Capture Jet™ technology, the low velocity supply and the internal shape of the hood ensure the best capture and containment capacity thus reducing the exhaust airflows by 30% to 40%.

KSA cyclonic filters (4) of the KWI hoods are automatically washed down thanks to the Water Wash technology. Its exhaust plenum is equipped with spraying ramps (5) connected to a CCW control cabinet (6) which delivers hot water with detergent to nozzles regularly spaced. Washing cycles are automatically managed by the control cabinet. The operating time of the kitchen is increased. The staff is also freed from heavy cleaning operations or the maintenance operator’s scope of supply is limited only to the cleaning of the outside of the exhaust plenums.

The KWI hood is equipped with centrifugal fan to feed the Capture Jet nozzles. All visible parts of the hood are manufactured from polished stainless steel AISI 304. Joints on the lower edge are fully welded.

Testing And Balancing (T.A.B.™) taps for flow measurement are fitted to the exhaust and Capture Jets.
Double and Peripheral Capture Jet™ Technology

- Reduces exhaust airflows and energy consumption by 30% to 40% due to higher capture and containment efficiency
- Enhances UV reaction efficiency due to lower exhaust airflow rates
- Better indoor air quality and comfort

The Capture Jets are a must in association with the Capture Ray technology. The lower the exhaust airflow rates, the lower the number of UV lamps, the higher the time exposure, the higher the UV efficiency.

The Capture Jet™ technology consists of two sets of nozzles, one vertical and one horizontal.
- The horizontal nozzles push vapours back towards the filters.
- The vertical nozzles increase the containment volume and prevents vapours escaping from cooking areas.

The bottom edge of the exhaust plenum is aerodynamically designed in order not to disturb the rising up of the thermal plumes, thus further improving the Capture Jets effect.
KSA Cyclonic Filters

- Vital for the efficiency of UV neutralization process
- Minimisation of grease deposits in the ducts
- Enhanced hygiene and safety (UL and NSF approved)

The KSA cyclonic filters are also a must in association with the Capture Ray technology. UV lamps are less efficient on large grease particles. Therefore, it is vital to have a high efficient first mechanical filtration before the UV.

The KSA cyclonic filters are composed of honeycomb profiles, which forces the air to swirl inside the profiles. The centrifugal effect is significant and, above all, continuous – especially in comparison to the action of traditional filters. Particles are thus pushed against the profiles. The collected condensation flows naturally towards the extraction plenum drains.

The KSA filters are 95% efficient in removal of 10 μm particles. They are UL-accredited as flame-resistant and have NSF hygiene and safety approval. Constructed from AISI 304 (1.4301) polished stainless steel.

Water Wash technology

- Reduces the length and cost of the maintenance operations
- Particularly adapted to large kitchens with long operating hours
- Automatically controlled daily washing of the KSA filters and the exhaust plenums
- Cleaning of the hoods is limited to the outer surfaces (recommended twice a year)

The Water Wash technology has been developed to automatically wash down the filters and the exhaust plenums, without the need for removal* of the filters from the exhaust plenums.

Each exhaust plenum is fitted with a unique ramp equipped with spraying nozzles. They are easily removable without any tool, to allow a fast bleeding of the pipework during the commissioning process. The Nozzles located in front of blind filters can be replaced by a cap. The number of nozzles is optimised in order to lower the water consumption.

Each ramp is fitted with a solenoid valve, thus reducing the size of the control cabinet. The exhaust plenums can be connected to a collector (installed with a slope) or directly connected to a drain to evacuate the water during each washing cycle. The whole pipework is constructed from stainless steel AISI 304.

* It is recommended to clean all filters in a dish washing machine twice a year.
Low Velocity Make-up Air and Comfort Limit Height
The make-up technology and design are both vital in order to guarantee the final total capture and containment of the hoods and staff comfort. Poor design would lead, inevitably, to drafts, thermal plume spillage and the sensation of discomfort.
It is highly recommended to use low velocity units to compensate KWI exhaust airflow rates, installed on the ceiling or wall mounted. Halton’s range of stainless steel low velocity diffusers allows the kitchen air to be renewed on the principle of air displacement. Fresh air naturally falls to the ground and fills the working area from that level. The absence of flow disturbances prevents this fresh air from spreading the convective flows generated by the cooking equipment.
A comfort limit naturally appears in the kitchen’s air levels through stratification. Below this height, air quality is optimal.

Hygiene, safety and maintenance
• HACCP certified (PE-567-HM02)
• Costs reduction for the filters cleaning
• Components are easy to access and clean
• Maximum hygiene and fire safety
The Water Wash technology avoids any non hygienic and non safe long-standing grease or condensate deposits in the exhaust plenums and on the filters (particularly important for cooking appliances such as combi ovens or kettles).
In addition, all Capture Jet™ hoods are designed to reduce the number of external stainless steel components thus reducing the number of joints to be cleaned for maximum hygiene. The joints of the lower edge of the exhaust plenums are fully welded to be liquid-tight. The bottom of the exhaust plenums is aerodynamically designed to limit the condensation risk.
Testing And Balancing (T.A.B.™) taps allow fast control of the exhaust and supply airflows during the commissioning phase or maintenance operations during the life cycle of the kitchen.
All these features give to the KWI hoods one of the highest levels of hygiene, safety and ease of maintenance.
Water Wash control cabinet
- Automatically controls the need for the washing cycles with limited staff intervention
- Water powered dosing pump with limited maintenance requirements
- Possibility of communication with the building management system
- Relays any faults within the system
- Construction in stainless steel

Each control cabinet has to be supplied with hot water. It is equipped with a detergent tank, connected to an automatic dosing system which operates without electricity and uses only the flow of water as its power source. The high dosing precision eliminates all risks of overdosing, thus contributing to a better environment.

A LCD touch screen allows an intuitive and efficient interface between the control system and the users. The washing cycles (pre-washing, washing, reaction time and rinsing sequences) are fully automatic and programmable in order to suit different operating conditions. The washing process can be manually overridden when required. The control system is equipped with an interface with the Building Management System (BMS).

The washing cycles are carried out with the fan off. The control cabinet checks the state of the fan as well as the water temperature and detergent level before the start of any cycle. It can be also equipped with a booster pump if the water pressure is too low to ensure good washing efficiency.

LCD Touch Screen (universal user interface)
- Totally intuitive and easy of use visual navigation
- Allows the system to be used by the kitchen staff without specific training
- Make the commissioning settings easier and faster
- Universal conception to manage all technologies of Halton's High Performance Kitchen concept separately or at the same time

Halton's LCD Touch Screen has been developed for high ease of use by the staff, as well as during the installation and commissioning of the system by the contractor. It integrates the following functions:
- Naming of the different hoods equipped with the Water Wash technology;
- Representation of the products with clear drawings allowing the potential alarms to be placed where they occur and statuses to be explicitly displayed;
- Access and modification of all the settings without PDA for a faster commissioning (with an access control)
- Intuitive weekly programming of the washing cycles (up to 2 washing cycles per day and per washing zone with 3 different duty levels of the kitchen).
- Possibility to manage easily additional functions provided by auxiliary modules to adapt the system to specific requirements (e.g. analog outputs or GSM module).

The LCD Touch Screen is fully compatible with all the other Halton technologies which can be combined with the Water Wash technology:
- M.A.R.V.E.L. Demand Controlled Ventilation system;
- Capture Ray™ technology.
- Pollustop ecology units.

KWII - Capture Jet™ hood combined with Water Wash technology
Water Wash controls belong to Halton Foodservice Control Platform (FCP)

Halton’s Foodservice Control Platform (FCP) has been developed to handle and manage all the innovative solutions of Halton’s High Performance Kitchen (HPK) concept. Whatever the type and number of technologies installed in one kitchen, they can all be managed at the same time by this unique control system. The standard user interface of every technology is then replaced by a unique one: Halton’s Touch Screen.

Halton’s Touch Screen is not only able to handle several technologies at the same time, it constitutes also a powerful communication gateway. It can manage GSM functions, being controlled by a distant computer or even feed Halton F.O.R.M. (Facilities Optimization and Resource Management) system with detailed information. F.O.R.M. system is then able to provide a real time global status of the equipment, energy efficiency analysis or maintenance planning tools.

Halton FCP’s Touch Screen (option): an intuitive and fully communicative interface

KW I - Capture Jet™ hood combined with Water Wash technology
KWI DESCRIPTION

CODE | DESCRIPTION
--- | ---
1 | Outer casing in stainless steel AISI 304
2 | Exhaust air connection and balancing damper
3 | Washing module
4 | KSA grease filter
5 | Spraying nozzles
6 | Washing water drain pipe
7 | Light fixture
8 | Capture Jet™ fan
9 | Capture Jet nozzles
10 | Personal supply air nozzle

QUICK SELECTION DATA

<table>
<thead>
<tr>
<th>L1 (active length)</th>
<th>L (section length)</th>
<th>Recommended Exhaust air volume*</th>
<th>Capture Jet air volume (with width = 1300)</th>
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<tr>
<td></td>
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<td>l/s</td>
<td>m³/h</td>
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<td>10100</td>
<td>2800 ... 4360</td>
<td>10100 ... 15720</td>
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</table>

* Minimum at a T.A.B.™ reading of 50 Pa (505 m³/h or 140 l/s per filter)... maximum at a T.A.B.™ reading of 120 Pa (786 m³/h or 218 l/s per filter)

ASSEMBLY OF MODULAR SECTIONS

KWI - Capture Jet™ hood combined with Water Wash technology
The dimensions below are for modular sections only; larger hoods are assembled using a combination of separate modules, which makes transportation and site handling easier.

**LOCATION OF CONNECTIONS (mm)**

For typical sizes

<table>
<thead>
<tr>
<th>L/B</th>
<th>1 Ø315</th>
<th>2 Ø315</th>
<th>3 Ø315</th>
<th>Light</th>
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<td>M, N</td>
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<tr>
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<td>-</td>
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<td>L1/2, 450</td>
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* 720 (L1<=1500, 2x18W), 1320 (L1>1500, 2x36W)

- Number of exhaust connections to be determined based on the sections length and on the calculation of the exhaust airflow rates depending on the cooking appliances.
- Other air supply possibilities of the Capture Jet fan and on request.
- Other connection configurations for exhaust on request.

**WEIGHT (h=555 mm, kg)**

<table>
<thead>
<tr>
<th>L/B</th>
<th>1100</th>
<th>1300</th>
<th>1500</th>
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**KW**I - Capture Jet™ hood combined with Water Wash technology

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**DIMENSIONS**

KWI (1 closed end)
The dimensions below are for modular sections only; larger hoods are assembled using a combination of separate modules, which makes transportation and site handling easier.

**LOCATION OF CONNECTIONS (mm)**

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<table>
<thead>
<tr>
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The Water Wash control cabinet is composed of 2 separate units to clearly segregate the hydraulic and electrical functions for safety reasons.  
A - Controls and electrical unit  
B - Hydraulic unit  

Controls and electrical unit  
1 - Emergency switch off  
2 - User LCD touch screen  
3 - Compression glands  

Hydraulic unit  
4 - Water outlet - Male DN 20 connection nipple  
5 - Water inlet - Male DN 20 connection nipple  
6 - Backflow preventer water outlet - Male DN 50 connection nipple  

General requirements  
- Inlet water temperature: 50 - 60°C  
- CCW cabinet capacity: 30 l/mn max  
- Water flow per nozzle: 1,22 l/mn @ 3 bar  
- Pressure required at the nozzles: 2,0 - 3,0 bar  
- CCW cabinet pressure loss: 2,5 bar @ 30 l/mn  
- Power supply (max): 500W @ 230V/50Hz  

As an option, the Touch Screen can be moved from the CCW cabinet to a specific cabinet. The touch screen can also be built in a wall.
The Water Wash control cabinet is composed of 2 separate units to clearly segregate the hydraulic and electrical functions for safety reasons.

A - Controls and electrical unit
B - Hydraulic unit
C - Booster pump module

Controls and electrical unit
1 - Emergency switch off
2 - User LCD touch screen
3 - Compression glands

Hydraulic unit
4 - Water outlet - Male DN 20 connection nipple
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The company has a policy of continuous product development, therefore we reserve the right to modify design and specifications without notice. For more information, please contact your nearest Halton agency. To find it:
www.halton.com/locations

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