Halton

Recirculating extract unit for commercial foodservice industry

No requirement for route to atmosphere

Enabling Wellbeing

Reco-Air By Halton

Halton

No requirement for route to atmosphere

RAH units work at the heart of a kitchen ventilation system serving all electric catering equipment and achieving complete recirculation of exhaust air with no requirement for route to atmosphere.

Highly efficient filter technology removes particulates and odours and provides exhaust air independently certified as clean to re-introduce as supply air.

Significantly reducing fire risk by eliminating long duct runs to atmosphere, simplifying planning procedures and providing opportunities to install kitchen operations in previously unfeasible locations.

RecoAir units prepares the exhaust air to be recirculated by removing

Grease

Smoke

Odor

Globally cost effective

- RAH unit reduce CAPEX investment. They eliminate the costly fire-rated duct work to atmosphere thus reducing the construction costs. They also reduce installation costs as well as utility usage and plant requirement with a compact design, an ease of assembly and flat pack options.
- Traditional extract duct work requires regular specialist cleaning and accessing duct systems is often difficult and costly.
- When combined with Halton's Capture Jet™ hoods or ventilated ceiling, the installation and operating costs are even more reduced. The operating costs reach the lowest possible level when M.A.R.V.E.L. optimisation airflow technology is also used.
- RAH units are a cost efficient alternative to traditional extract when there's no easy route to atmosphere.

Reduced fire risk

- RAH significantly reduces fire risk by eliminating duct work to atmosphere and suppressing grease deposits after the unit.

Emissions control

- The contaminants produced by catering kitchens and food preparation facilities are not any longer expelled to atmosphere contrary to traditional extract.

Flexible locations

- RAH units can be located internally or externally, adjacent to or remote from the point of hood extraction. The unit can be hung within ceiling voids giving flexibility to equipment layout and also eliminating the requirement for certain planning processes.
- RAH units are easily retro-fitted or relocated.

Approvals

- Fire Officer
- Air Quality Consultant
- Acoustic Consultant
- Building Control Officer
- Environmental Health Officer
- Food Standards Agency
- City of Westminster:
  APPROVED alternative to high level kitchen extract

It only remains to remove the heat and safely combine savings on installation and optimised operating costs

Cool down the return air and the treatment is completed

After RecoAir unit, the return air is a similar temperature to that extracted and needs to be cooled down before being blown back into the kitchen. There are a number of methods to cool this warm air whatever the kitchen type and configuration.

When a kitchen does not have an easy route to atmosphere and require a recirculating system, the extra cooling operating cost exists but is not as significant as it might seem. Part of the extra cooling needs are offset by lower warming needs during winter.

Add a bit of fresh air and the recirculating process is also completed

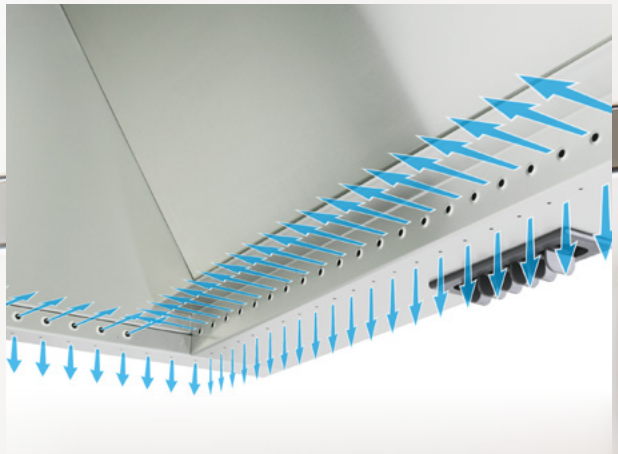
Depending on local regulations, a minimum amount of "hygienic" fresh air has to be blown inside the kitchen.

There are also a number of methods to bring that air from outside, with very limited impact on installation costs, as the airflows involved are very limited compared to the recirculation airflows linked to the cooking appliances, especially when RecoAir units are connected to Capture Jet™ hoods.

Save on installation and operation with the Capture Jet™ technology

The Capture Jet™ technology, used on both Halton's hoods and ventilated ceiling, enables reducing the exhaust airflow rates by up to 40% and even 50% with low proximity hoods.

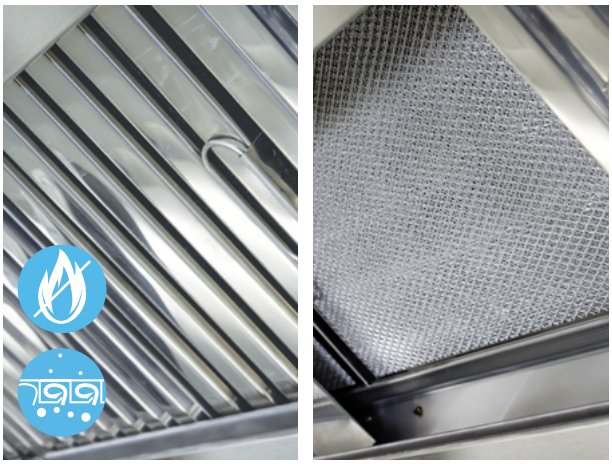
Can you afford not to reduce the size of RecoAir unit accordingly? What to say about the reduction of the ducts section, the installation time, the noise of operation and draughts, the energy consumption for the fans and also the space-saving in the plant room and in the ceiling voids? It is really question of a perfect match between savings and comfort.



Benefit from even more savings and comfort with M.A.R.V.E.L. technology

M.A.R.V.E.L. technology adjusts, in real time, the exhaust airflow rates depending on the cooking activity. It has the defining feature of doing it hood section per hood section, in a totally independent manner and without compromising the smoke and heat capture.

Combined with the Capture Jet™ technology, the exhaust airflow rate reduction can be brought to up to 64% which means more electricity savings on fan operation and ideal working conditions.



Increased operation savings thanks to longer lifetime for the filters

The Capture Jet™ hoods and ventilated ceilings are equipped with high efficiency KSA cyclonic filters. They remove up to 95% of the 10 microns particles. The combination with mesh filters globally increases KSA filters' efficiency.

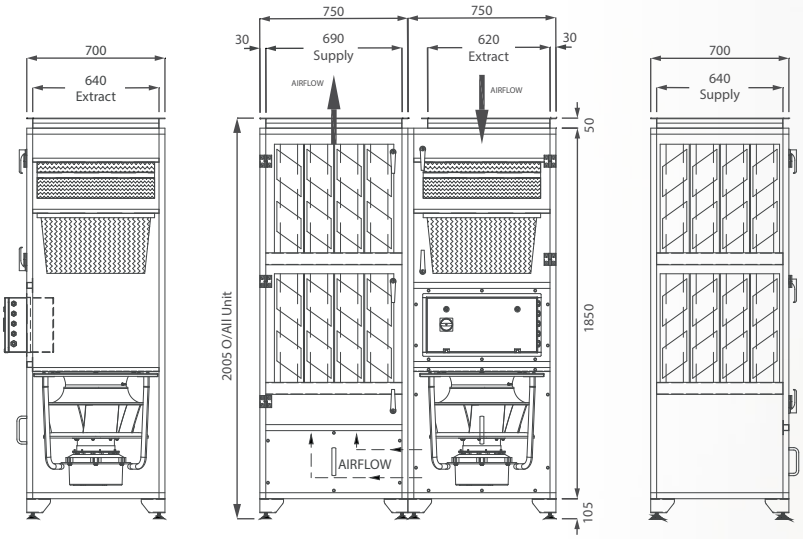
What is captured by the easy to clean primary filters does not have any longer to be captured by RecoAir unit's filters. Their lifetimes are increased leading to savings on operation.

Fire safety is also increased and the cleaning is cost decreased due to less grease deposits in the ducts before RecoAir unit.

Silent, limited heat transfer, minimum leakage and built to be fire stable

RecoAir unit's structure is made of robust aluminium profiles and the double skin panels are insulated with 45 kg/m³ density mineral wool. This not only makes the unit, in the unlikely event of fire, stable but also limits the heat and odour transfer to the plant room on normal operation. It also makes the unit silent.

RecoAir unit RAH1.0 Standard Specification



- 25mm double skin panels
- Galvanized steel finish to interior
- Various external finish options
- Panels insulated with 45 kg/m³ density mineral wool
- Primary filters sets
- Fan section 400V/50Hz
- Three phase suitable for 0 to 10V signal control
- Unit duty 0.9 m³/s @ 250 Pa external
- Motor full load on maximum speed 7.2 A
- Max. ambient working temp. range 45°C
- F4 Activated carbon cylinders
- Weight with all filters fitted approx. 542 kg

RAH Range of models

Model	Design airflow & External pressure			Nominal Power [A] @400V/50Hz	Fan operating temp. [°C]	Hood Length (1)	Units dimensions [mm] and weight [kg]							
							Floor Mounted				Void Mounted			
	[m³/s]	[m³/h]	[Pa]				W	D	H	[kg]	W	D	H	[kg]
RAH.5	0.5	1800	250	4		1.5	880	685	2155	385	880	2100	800	436
RAH.8	0.8	2880	180	4		2.0	1100	850	2155	440	-	-	-	-
RAH.1.0	0.9	3240	250	7.2		3.0	1500	700	2005	542	700	3580	875	594
RAH 1.5 (2)	1.2	4320	320	7.2		4.5	1540	1130	2005	753	1130	3580	895	857
RAH 2.0 (2)	1.8	7200	250	8		6.0	1540	1430	2005	914	1430	3580	895	1020
RAH 2.5 (2) (3)	2.25	6480	320	16		7.5	1815	1540	2005	1142	1815	3580	895	1269
RAH 3.0	2.7	9720	320	16		9.0	2370	1500	2005	1380	-	-	-	-
RAH 4.0	3.6	12960	350	16		12.0	2970	1500	2005	1693	-	-	-	-

(1) Max hood length typically connected to the unit in meters
(2) UL listed models
(3) DA Double sided access recommended - Access required front and rear of unit

Air Cleanliness Study by Validair

Site: The Waterside, Imperial Wharf, Chelsea
Equipment: RAH2.5
Date of test: 31/03/2015
Report Reference: VA-RBF-50189-Rev2

Report summary
The air quality from an RAH system is very clean and maintains a level of around ISO Class 7-8 for smaller particles. The larger particles are arrested during cooking periods and for these sizes ISO class 5-8 is seen.

This means that the air returning from the RAH unit is around a thousand times cleaner than typical atmospheric conditions.

Acoustic survey report by Applied Acoustic Design

RAH noise levels are very low. Casing-radiated noise from standard units are between 54 to 57 dBA when measured at 1m.

RAH Units already operate in many properties

- Heathrow
- Network Rail
- British Land
- Hammerson
- Capital and Regional
- McArthurGlen Group
- Everyman Cinemas
- Canary Wharf Management
- Al Nakheel Mall, Riyadh
- Crossrail
- Debenhams
- Westfield
- St George
- intu
- Land Securities
- Grosvenor
- Standard Life
- Selfridges
- Young's & Co
- PF Chang's

Couple of references in brief

Itsu, Terminal 5, Heathrow

No route to atmosphere

A new location identified by Heathrow for use by an F&B operator, but no route to atmosphere available.

RAH units installed to food preparation areas, enabling a full, new hot food offer to trade at the airport.

Solution: RecoAir **RAH1.5** and **RAH1.0**

JD Wetherspoon, Network Rail Waverley Station, Edinburgh

Unlock a new location

Heritage Grade II listed building had no option for external extract due to strict conservation control.

RAH unit installed, enabling a previously unfeasible location to trade with a full, hot food menu.

Solution: RecoAir **RAH2.5**

Intu, Merry Hill Centre

Change of use A1 to A3 - retail to hot food

The landlord hoped to convert a vacant retail unit for use by an F&B tenant.

RAH unit installed enabling ground floor unit with no route to atmosphere to operate a full commercial kitchen with hot food offer.

Solution: RecoAir **RAH2.0**

Young's The Waterside, Imperial Wharf, Fulham

Resolving problems

The developer St Georges experienced five years of complaints from residents in a high value building effected by ground floor restaurant emissions. The conventional system was removed, an electric cook line installed and a RecoAir unit finally resolved historic issues.

Solution: RecoAir **RA2.5**

Esencial, Unibail Rodamco, Barcelona, Spain

Open air food concept periodically moving to new venues across Spain. RA1.5 provides self contained extraction and enables flexibility to easily relocate.

Solution: RecoAir **RAH1.5**

Camden Bar & Kitchen, Airside, Stansted Airport

SSP identified an opportunity to introduce a bar & kitchen in an airside location previously occupied by retail and with no route to atmosphere.

Installing RecoAir enabled the previously unfeasible location to trade with full hot food menu.

Solution: RecoAir **RAH2.0** UL x2

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