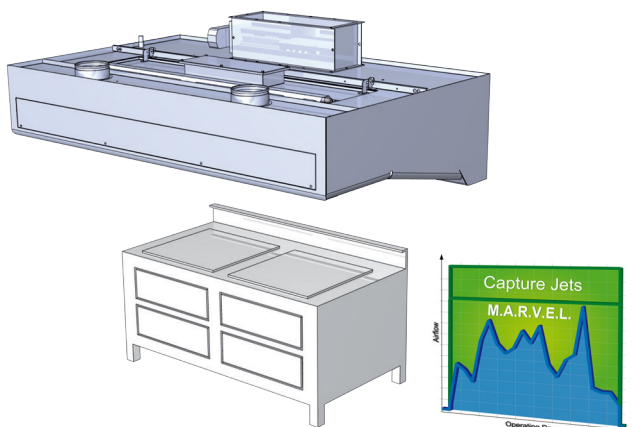


HALTON M.A.R.V.E.L.

Demand controlled ventilation system for Halton Marine galley hoods

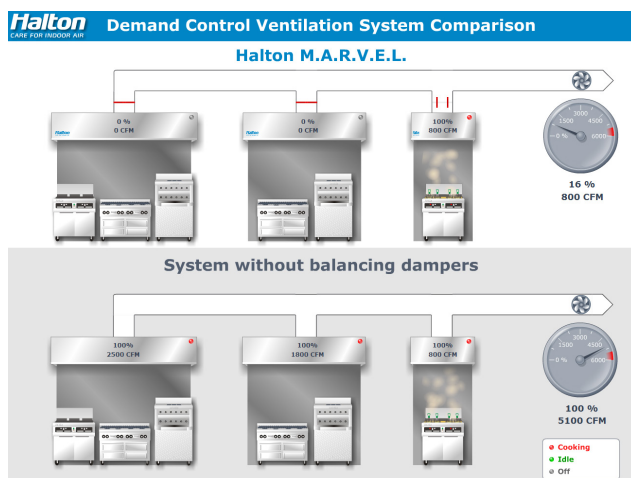


OPERATION PRINCIPLE

M.A.R.V.E.L. was designed to adapt in an automatic, permanent, and highly responsive manner without human intervention, and to suit all possible galley operation settings. The system continuously measures the actual status of each item of galley equipment:

- Switched off
- Heating up to cooking temperature
- Hot, cooking in progress.

On the basis of the status, and thanks to the modulating fire dampers integrated into the hood, M.A.R.V.E.L. adjusts the exhaust rates automatically, hood by hood or zone by zone. M.A.R.V.E.L. system will also take care of suitable supply air flow, by signalling the supply air fan and modulating required dampers.



APPLICATIONS

The Halton M.A.R.V.E.L.* is the first truly intelligent, responsive, and completely flexible demand controlled ventilation (DCV) system specifically designed for Halton hoods. In combination with Halton's Capture Jet™ technology it offers the lowest levels of energy consumption currently possible and provides complete comfort for users.

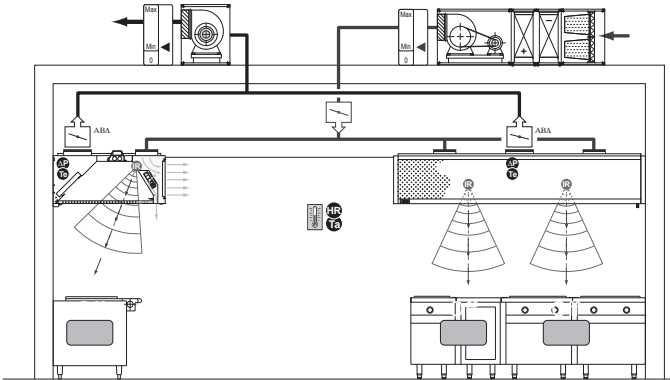
The Halton M.A.R.V.E.L. that is packed full of technological innovations is compatible with Halton KW3, KWT, KWH, KVF, KVI, KFM, KVM hoods.

FEATURES

- M.A.R.V.E.L. is able to identify the current status of the cooking equipment (switched off, heating to cooking temperature, or cooking in progress).
- M.A.R.V.E.L. has the unique ability to adjust the exhaust flow rate to match these three statuses and, above all, hood by hood and in a totally independent manner. If only one of the cooking ranges in the galley is operating, the flow rate for that hood or zone concerned will be automatically adjusted to that required. The other hoods or zones will continue operation at a low flow rate.
- M.A.R.V.E.L. is capable of continuously regulating the flow rate achieved with the extraction fans but also, and most importantly, their pressure. By operating at a variable pressure and flow rate, this system enables you to fine tune the equipment to the exact area and overall requirements, with power consumption kept to the absolute minimum. The associated supply fans are also controlled so as to guarantee the air flow balance of the kitchen.
- M.A.R.V.E.L. is a totally flexible system. It can be reprogrammed at any time in response to changes in the galley layout.
- M.A.R.V.E.L. can be integrated, as a retrofit package, with previously delivered Halton hoods.

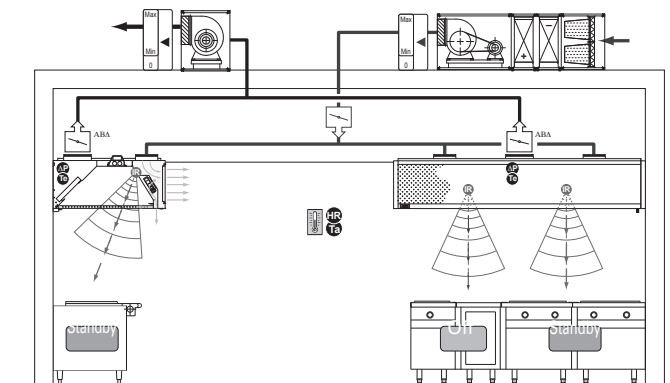
OPERATION PRINCIPLE

1 - PREPARATION OF THE GALLEY



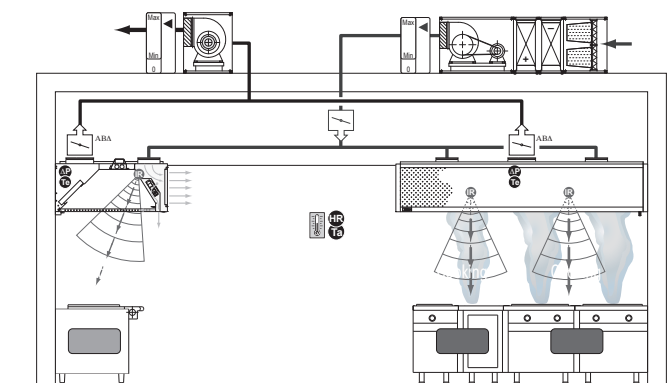
When the galley is not in operation, M.A.R.V.E.L. can be programmed to stop the ventilation or to continue it at a low flow rate that keeps proper hygiene maintained during the inactivity. In the latter case, the fans and dampers are automatically adjusted to the minimum programmed settings.

2 - HEATING OF THE EQUIPMENT



The cooking equipment is gradually heated according to the requirements of the menu to be prepared. The IRIS™ sensors associated with temperature sensors detect the state of the equipment concerned (hot and in hold). The system then automatically adjusts the position of each individual damper and the fan speed, in order to achieve the exact flow rate required for each hood in response to changing requirements.

3 - FULL-SCALE ACTIVITY OF THE GALLEY



When the galley is fully active, most of the equipment enters cooking mode while the other equipment generally remains on standby. The infrared sensors once again detect this change in activity, as it occurs. The exhaust (and fan) flow rate is then automatically adapted to the change in requirements, hood by hood in real time.