Dear Ladies and Gentlemen.

We hereby would like to inform you about our new development for exhaust hoods. The principle technology with protective rights is finalized and has been tested.

Thanks a lot to Martin Tomic, HVAC Superintendent, Royal Caribbean Cruises Ltd. Mobile: +49 (0) 1752147816.

Mr. Tomic has supported us in all aspects developing and testing this unique exhaust system.

Martin Tomic can give information regarding his experiences with the developed new exhaust hood

Target WAGENER GASTRONOMIE ENGINEERING would like to achieve:

Optimal and best possible mechanical filtration of all grease particle sizes already in the exhaust hood, without any electronically components like UV light, plasma systems or similar.

Steps undertaken to achieve the above mentioned target:

- 1) Implementation of easy to use filtration system
- 2) Reaching a minimum of fat deposits inside the exhaust ducts
- 3) No need of spare parts for any kind of grease combustion or oxidation units
- 4) Deletion of any kind of control cabinets
- 5) Deletion of wash cabinets
- 6) As no control cabinets needed anymore, thus no cabling between control cabinets and exhaust hoods
- 7) As no wash cabinets needed anymore, thus no piping between wash cabinets and exhaust hoods
- 8) Usage the space of the not anymore needed control- and wash cabinets for galley furnishings
- 9) Massive reduction of signals for hood control
- 10) Simplified commissioning of the exhaust hoods itself
- 11) Simple adaptation of the exhaust air volumes to the particular cooking situation
- 12) Possibility of creating an external and internet-based adaptation of exhaust air curves
- 13) Providing easy access for the crew to adapt the control variables of the exhaust air behavior during the ongoing cooking process without mechanical activities
- 14) Reduction of the investment while improving all effects of the exhaust hoods
- 15) Reduction of installation work on board
- 16) Easier commissioning and startup of the exhaust system

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Benefits for our customers:

- A particularly high savings potential for the yard. This due to a maximum reduction of needed cabling, as well as not needed I/O points.
 Saving of app. 800 1000 I/O points depending on the requests and project size, as well as app. 3000-4000 meter data cabling.
- Beside the saved material also the work on board can accordingly be reduced, which means less disturbance during installation and commissioning.
- Adjustment of the exhaust system will be easier.
- Each hood can be individually adjusted to the requested exhaust volume without mechanical activities.
- Easier commissioning of the complete AC-System.
- Adjustment of exhaust air volume can easily be carried out.
- No control cabinet needed anymore.
- The exhaust hood can be connected via plug to the electrical supply line. In case requested a common alarm can be provided.
- Due to the fact that control cabinets are not needed anymore, former space could be utilized for galley equipment.
- Automatic adaptation of the exhaust volume to prevailing cooking situation underneath.
- Easy adaptation of the exhaust air system in case of a changed food menu.
- Reaching of a maximum energy saving by using demand based ventilation and exhaust hoods with recirculation air.

General:

In case requested, data storage of different condition events is possible.

Detailed error storage in case requested is possible.

Interface connection for error alarm is available.

Exhaust hoods adapted to the available space.

Location of exhaust duct connection in accordance to customer request.

Filtering of grease particles:

Together with an institute for filter technic an optimal filtering system has been developed.

Even though no UV System and no hood washing system are existing, excellent results regarding cleanliness inside the ducts have been achieved due to the new filtering system.

The results are better even compared to the former exhaust hoods with UV and hood washing system. Please see as well the photos below.

Available hood types and constellations:

Of course, also for the future all known hood types and constellation, with and without UV Systems are still available.

All hoods will be built tailor made according the prevailing situation, which means no standard sizes.

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- Photos of ducts connected to exhaust hoods without UV Systems and without washing systems which have been taken approx. half a year after commissioning –





This new developed technology is providing the possibility to adjust all set points individually to the prevailing cooking situation underneath the hood, without any mechanical activities and without any needed connection to ships automation system. The installed components are providing our customers with unimagined possibilities and unsuspected precious flexibilities.

In case of questions or additional needed information, please do not hesitate to contact us.

We would like to invite you, to visit our extended new production facilities, as well as to present the new hood technologies and to discuss any questions or provide additional needed information.

Sincerely yours

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Gerichtsstand Meppen (nicht bei Verbrauchern)