

Please find herewith enclosed the  
Frequently Asked Questions regarding the  
ventilation systems in buildings and the  
coronavirus pandemic

# Frequently Asked Questions

Ventilation and Coronavirus

May 2020

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# Questions & Answers

## Ventilation / COVID 19

### Recommendations and usages

#### *“Does ventilation of the buildings help the Coronavirus to spread? “*

At present knowledge, scientists have demonstrated that the new coronavirus (SARS-CoV-2) is spread by droplets released into the air when an infected person coughs or sneezes. The droplets do not stay in suspension but usually fall to the ground or land on other surfaces a short distance from the infected person – therefore social distancing is effective in preventing the spread. This is information from Johns Hopkins University, widely recognized and cited as a source of expertise on the coronavirus.

We have no proven cases at this stage of the spread of SARS-COV2 through ventilation systems.

#### *“What are the different types of ventilation systems?”*

##### **CMEV Systems**

Central Mechanical Exhaust Ventilation (CMEV) systems extract air from the buildings centrally. Air intake happens through air inlets generally located above the windows. Our recommendation is to continue to operate those systems in times of an epidemic.

##### **Heat Recovery Ventilation**

Heat Recovery Ventilation is a ventilation solution based on an exchange system that will pre-heat the outdoor air using the calories of indoor air that is extracted. Therefore, outdoor air intake happens in one place. Heat Recovery Ventilation units are generally equipped with filters that will greatly improve the air quality.

Keeping ventilation systems in operation during an epidemic helps limit the risk of stale air building up by providing fresh air into the premises.

## ***“In what ways does Air Conditioning differ from Ventilation?”***

Air conditioning is the process of removing heat from the interior of an occupied space to improve the comfort of occupants. Air Conditioning units often use a fan to distribute the conditioned air to an enclosed space.

Typical Air Conditioning systems include Split Systems, Multi-Split System, Central Air Conditioning and Portable AC.

Most air conditioning systems only recycle indoor air which differs strongly from ventilation which bring fresh air.

## ***“What is the recommendation on the operation of ventilation regarding the global coronavirus epidemic? “***

The following recommendations are advisable:

First and foremost, keeping ventilation systems in operation during an epidemic helps limit the risk of stale air building up by providing fresh air into the premises.

Moreover:

- For residential buildings, it is recommended to continue to provide general and permanent ventilation. It is necessary to check the correct operations of the ventilation system and to make sure that the vents and air inlets are not blocked.
- For other buildings:
  - extend the operating time of the ventilation or air treatment system and ideally keep it in permanent operation or extend the daily operating range.
  - Increase the supply air flow and / or extract air including when the premises are unoccupied

## ***“Should I continue operating the Air Handling Units equipped with heat recovery? “***

Yes, but some rules can be followed.

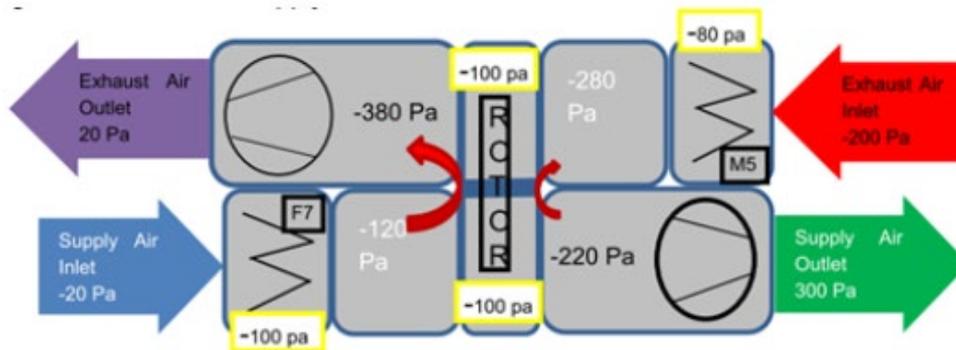
As REHVA (Federation of European Heating and Ventilation Associations) states, under certain conditions, it is theoretically technically possible, although highly unlikely, that heat recovery devices may carry over virus attached to particles from the exhaust air side to the supply air side via leaks. This would occur in the unlikely event that a droplet reaches an extraction grill which is usually located close to the ceiling.

For properly operating rotary heat exchangers, fitted with purging sectors and correctly set up, leakage rates are about the same as that of plate heat exchangers being in the range of 1-2%.

It is shown that rotary heat exchangers, which are properly constructed, installed and maintained, have almost zero transfer of particle-bound pollutants (including air-borne bacteria, viruses and fungi), but the transfer is limited to gaseous pollutants such as tobacco smoke and other smells.

Because the leakage rate does not depend on the rotation speed of rotor, it is not needed to switch rotors off.

In conclusion, we recommend inspecting the heat recovery equipment including the pressure difference measurement



*Diagram:* It is advisable to have a balance of pressures which favors the flow of any leaks in the desired direction: from supply air to extract air: here -60 Pa (difference between -220 and -280) and fresh air towards the exhaust air: here -260 Pa (difference between -120 and -380)

***“The ventilation system includes a recirculation box, what should I do? “***

We recommend shutting off the recirculation box during periods of epidemic (recycling rate = 0)

***“Which filters should I use? Should I change them? “***

It is recommended to use level filters M5 for extraction and F7 for air supply according to ERP 2018.

Furthermore, according to EN13779 (switching to ISO 16798) we recommend using 80% level ePM1 filters.

ALDES / Exhausto recommends changing the filter according to the control and replacement schedule that was established when installing your product.

**As a summary, we recommend to:**

- Keep ventilation systems running
- Ensure the maintenance of the ventilation system (including filters)
- Ensure the correct pressure balance for air handling units with rotary exchanger
- Extend the operating time of the ventilation or air treatment system and ideally to keep it in permanent operation or to extend the daily operating time.
- Increase the supply air and / or extract air flow by favoring periods when the buildings are unoccupied