



**YACHT ENGINEERING**

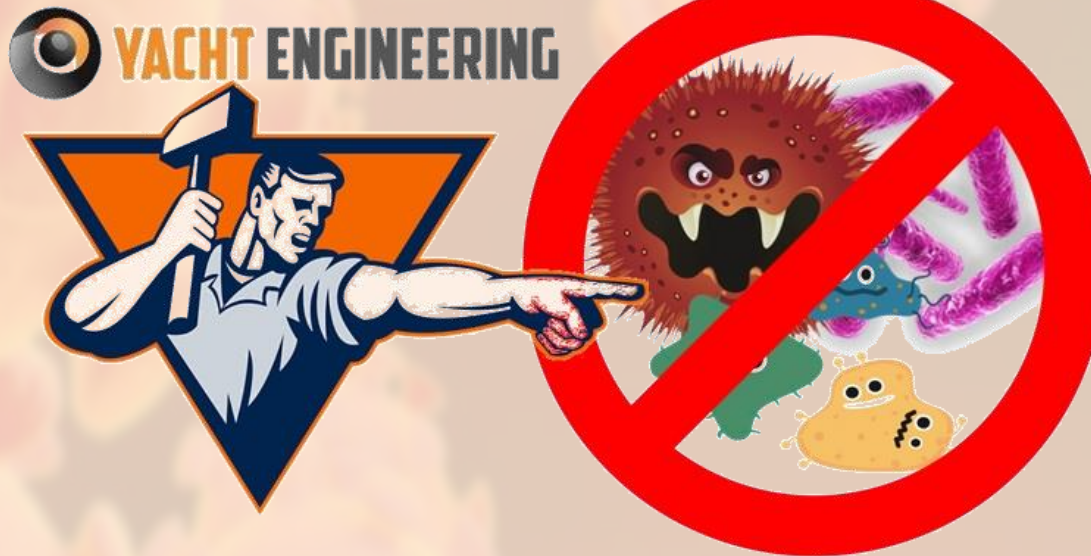
**SECURE  
YOUR YACHT  
AGAINST  
COVID-19**

Yacht Engineering has its concerns about the future safe sailing or indwelling the internal compartments of the yacht. We normally would like to think that the air in very prestigious and expensive superyachts on board is clean and disinfected, but is it really like that?

Since we specialize in cleaning the internal ducting system on superyachts:

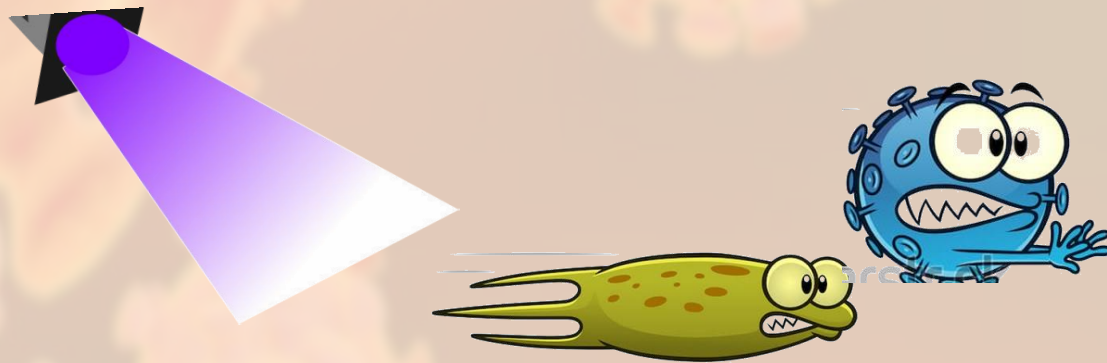


We would like to have our input and make sure the internal circulation air will have certain quality and will not be a reason to spread similar viruses as COVID-19 or any airborne diseases. Please, check here:





Our further development in providing a healthy yacht environment will be to introduce Ultraviolet (UV) light disinfection method on the air conditioning system on board. UV lights are known to kill viruses, microbes and bacteria and for this reason UV devices are normally used for sterilization in the hospitals and food processing facilities. Exposure to UV radiation is also very harmful to our skin and eyes by causing cancer and cataracts.



We would like to have the benefits of UV lights by killing the viruses but not as health hazard. The technology that we use is known for long time and is under manufacturing for the big industrial or public halls where the circulation air is maintaining not only under the requested temperature, humidity and dust free but also properly disinfected. Disinfection is made by using the UV light tubes which are in the ventilation system. This way the passing circulation air is free of microbes and viruses but also safe for the people as the UV radiation is only inside the enclosed space of the ventilation system. Superyachts and any other ships have common circulation system on board and are very vulnerable in spreading diseases like COVID 19.

The air conditioning system on board normally doesn't isolate the single cabins by recirculating the air inside this space but it comes from centrally controlled air handler which mixes the air from different compartment.

In case that a person is sick from COVID-19 and even if he is isolated in one cabin, the common recirculation system will spread the virus through the ship and most probably infecting rest of the crew and guests. This should be the main reason to have more than 700 persons infected on passenger vessel Diamond Princess out of 3400, as per the news all infected by a single person tested positive from the previous cruise and already disembarked.





Here are the measures that we can propose in order to reduce number of infected persons on board:

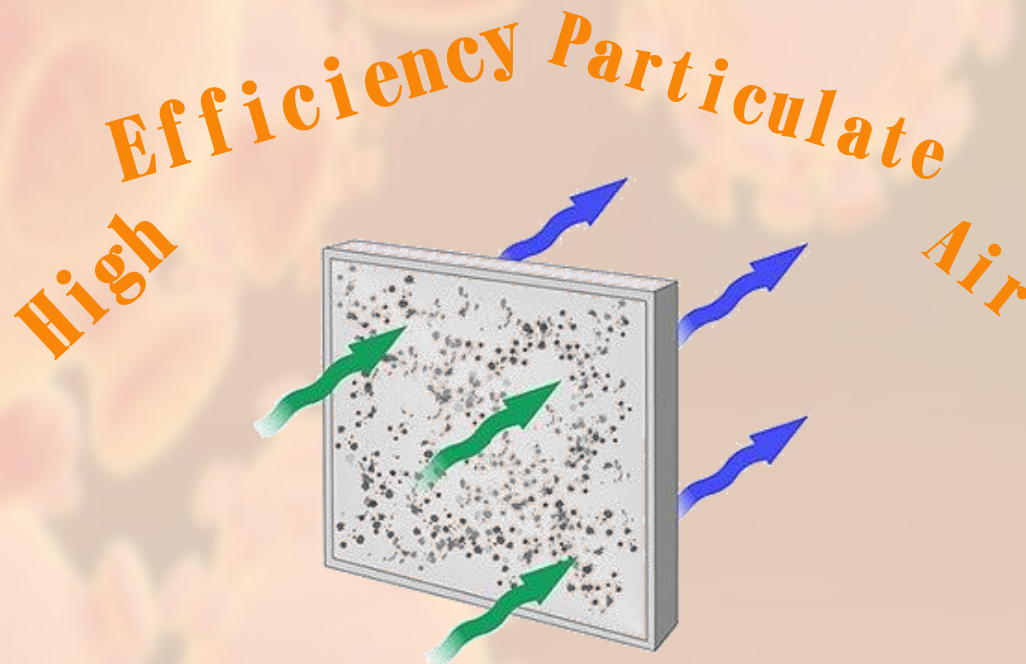
- If your boat is relatively small (less than 50 m in length) and has type of air conditioning system on board that consist of individual fan coil unit per each cabin, then you shouldn't worry about spreading the disease through the ventilation system. The fresh air to the cabins enters from outside fresh air makeup unit and leaves through the sanitary exhaust system in the bathrooms. In order to stop any air that is passing from an infected cabin to the rest of the boats, then the fresh air make-up unit should remain shut and the exhaust sanitary fans as well. Only the fan coil unit in the individual cabin can be run which circulates the air in this compartment.

- If your boat is relatively bigger (over 50 meters in length) then she most probably has common air conditioning and ventilation system on board that mixes the air from different compartments into one or more air handler units. In this case we will advise the crew to find the way and stop the recirculation of the air and provide only outside fresh air to be used through the air handlers. This measure will have a lot of downsides as the cooling capacity of the system will be decreased and the air pressure inside the superstructure will be relatively higher than the atmospheric pressure. Still all these measures will not prevent spreading the viruses as COVID-19 as the venting valves controlling the recirculation and fresh air into compartments are not air tight, meaning some minimum amount of recirculation air will pass through and infect the fresh air entering the cabins/compartments.



In this case we will advise UV lights to be installed inside the ventilation ducts which will significantly reduce the possibility of virus spreading through a common air conditioning and ventilation system.

We recommend additionally installation of HEPA filters on the existing systems as in order to be effective they will have to be properly calculated and sealed in the air handler units .



Please note, our advice here is only suggestion by our experience, if you would like to have a precise instructions how to prevent spreading COVID-19 on your boat please contact us and we will study the air conditioning and ventilation system onboard and provide further recommendations. Please, call us!

**CONTACT US**



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