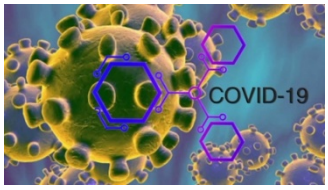

SAFE OPERATION OF HIGH-PRESSURE BREATHING AIR COMPRESSORS DURING THE CURRENT GLOBAL PANDEMIC

MAY 2020

We have received many queries regarding the safe operation of Coltri compressors during the current SARS Cov 2 Pandemic.

We have extensively researched data from reliable sources, and believe we can safely reassure you that, if you follow the advice below, safe operation of your COLTRI compressor is possible during the current pandemic.

Please review the most frequently asked questions and our answers below.

Q - Could my compressor fill cylinders with air contaminated with virus particles?

A - Published studies provide evidence that the coronavirus which causes COVID-19 is primarily transmitted from one person to another via respiratory droplets, and to a lesser extent through contact with contaminated objects and surfaces.

When virus particles are contained within respiratory droplets, they are subject to the laws of gravity and will fall to the ground.

Airborne Transmission of the SARS Cov 2 coronavirus has not been reported.

As such for virus particles to be introduced into the compression cycle an infected operator or bystander would need to be in close proximity to the compressor with their head above, or on a similar level with the air intake thereby enabling respiratory droplets to fall into the air intake.

It is therefore essential that the inlet to the compressor is located in a safe place to prevent any contamination.

It is also worth noting that the SARS Cov 2 virus is sensitive to high temperatures. Very high temperatures are reached at the peak of compression, well above what is currently believed to be the virus resistance threshold. It is therefore unlikely that virus particles can remain viable after passing through the compressor.
Attached: RSTC, Divers Alert Network. Covid 19 and Diving Operations - 10 Recommendations on Risk Prevention and Mitigation.

**** SAFE OPERATION OF YOUR COLTRI COMPRESSOR IS POSSIBLE BY USING SIMPLE PREVENTATIVE MEASURES ****

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Q - How should I prepare and operate my COLTRI compressor?

A - Elevate the air intake as respiratory droplets are subject to gravity.

We recommend extending air intake to at least 2.5 m vertically above the compressor.

Ensure there is no possibility of respiratory droplets falling into the intake from above.

(For Example: The air Intake should not be placed below the upper deck of a boat or an open mezzanine floor)

**** PLEASE CONTACT YOUR LOCAL DEALER IF YOU REQUIRE ASSISTANCE WITH SAFE AIR INTAKE PLACEMENT ****

Practice personal hygiene and physical distancing procedures in the filling area. Only authorized people should be allowed within 2 metres of the filling area, and the storage area for filled cylinders.

Operators should wash hands frequently and wear a face mask.

Surfaces, including filling panels, compressor filling valves and tank valves should be cleaned frequently with an effective disinfectant.

Note: If using alcohol-based disinfectants, including hydroalcoholic hand solutions. Avoid direct or indirect contact with equipment, cylinders and filling hoses used for oxygen-enriched air as even a small percentage of alcohol, at relatively low temperatures, can cause fire or explosion.

Q - Are there additional Intake Air Filter options I can add to my compressor system?
A - Yes, additional intake filtration choices are available:

- **HEPA grade filtration**

A HEPA filter is a High Efficiency Particulate Air filter that is able to capture particles smaller than those caught by a standard intake filter => 0.3 Microns and as such is able to prevent bacteria and virus particles from passing into the compressed air.

Pro: A HEPA filter can be easily installed in place of the standard intake filtration cartridge and requires no additional power source or mounting.

Con: More expensive that standard filtration but not cost prohibitive.

A HEPA filter should not replace the preventative measures outlined above.

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- **Ultra Violet C light treatment of intake air before compression.**

Note: Effectiveness of UVC disinfection of air is directly related to the strength of the light source, its proximity and the duration of exposure to the air.
The required flow rate of air into the compressor limits the duration of exposure to the UVC Light source.
Research into the effects of UVC Light on SARS Cov 2 is ongoing.
Current studies suggest a significant dwell time is required, in addition research suggests that the susceptibility of the virus to UV light is reduced when contained within a respiratory droplet.
Although new research is being conducted, most data on this subject is from studies involving the disinfection of water where UV disinfection is recommended in most reports as a secondary treatment rather than the main/sole treatment

Pro: UVC disinfection of air prior to HP compression process
Note: When discussing UVC treatment the term 'disinfection' is used not 'sterilization' as 100% effectiveness is not considered possible without multiple cycles.

Con: Expensive and requires electrical supply and cyclical replacement of UVC light source. Due to flow rate of air there is limited duration of exposure and it is not currently proven to kill virus particles which could engender a false sense of security.

A UVC Filter should never replace the preventative measures outlined above

Q - What about Low pressure Nitrox Membrane that feeds my compressor ?

A – Particle size of the SARS Cov 2 virus means it is expelled from the permeate side of the membrane so does not make its way to the HP compression process

**** SAFE OPERATION OF YOUR COLTRI NITROX SYSTEM IS POSSIBLE BY USING SIMPLE PREVENTATIVE MEASURES ****

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