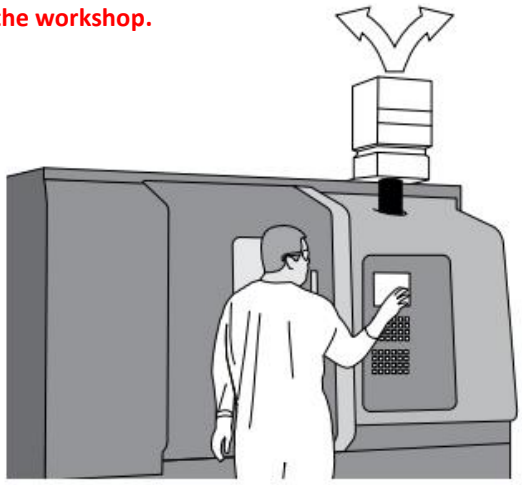
Improving Workplace Safety

Process Emissions -Mist Dust Fumes

CNC Machining

HEXmon SENSOR
seeing the unseen

Recirculating type Local Exhaust Ventilation (LEV) systems return process emissions back into the workshop.



CNC machine with a standalone LEV fitted

Many manufacturing processes create emissions.

Emissions hazardous to health require suitable 'engineering controls' to minimise exposure risk

CNC machining creates mist emissions from the contaminated metalworking fluid (neat and water mix) and are a known risk

HSE Guidance document MW1 calls first to

- **Discharge extracted air to a safe place outside the building…"**
- **or "if the air is recirculated back into the workshop a suitable high efficiency air cleaning device is in place"**

Recirculating LEV systems are the most common engineering controls installed on CNC machines

By not continuously monitoring the relative change in emissions from leaks and high concentrations of mist from, e.g. use of compressed air, the effectiveness and efficiency of LEV systems are unknown and a risk to health and the business

The Health & Safety Executive state: "**People develop these diseases because they breathe… in airborne contaminants at work, often because control measures do not work well enough.**"

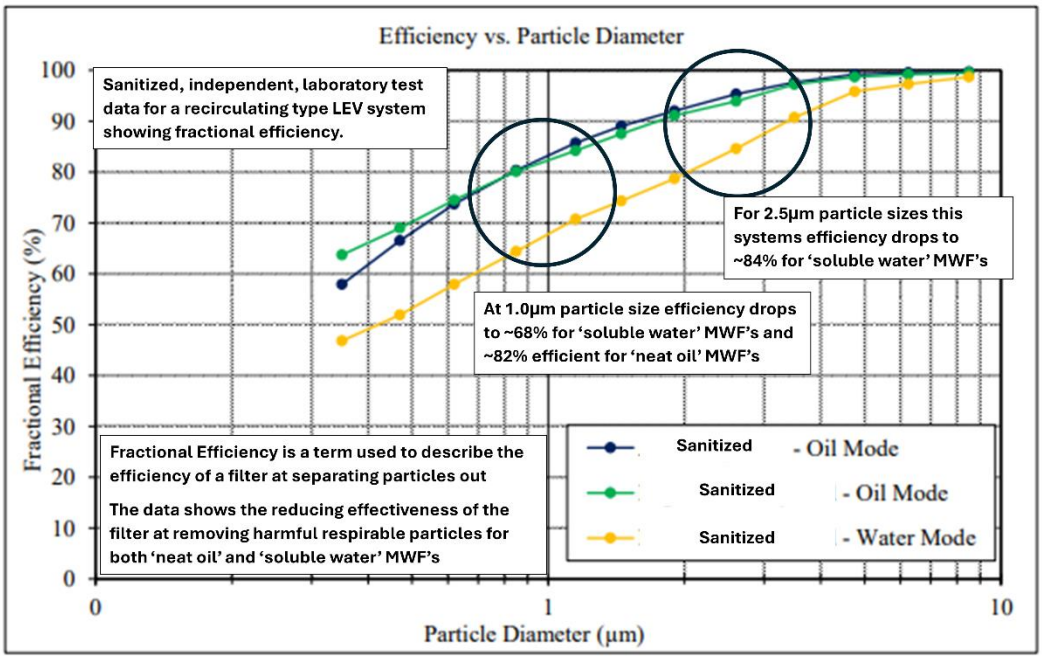
Chpt.1 HSG258

LEV's are mechanical devices and prone to inefficiencies in operation and a deterioration of performance over time. From the moment the LEV starts to process metalworking fluids there is a risk of increasing emissions into the workshop, reducing air quality and subsequent increase in risk to health

This sanitized graph shows independent laboratory testing data of a recirculating type LEV for both 'Oil Mode' neat cutting oil and 'water mode' soluble coolants.

Particulate sizes ≤10µm are not as efficiently removed and these particles can be inhaled deep into the lungs and enter the blood stream

A better way is needed to monitor the varying levels of emissions and risk to health



Click to learn how HEXmon SENSOR monitoring and reporting platform helps 'safety first' companies understand the relative change in emissions from manufacturing processes

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