

WHAT IS...



Local Exhaust Ventilation

LOCAL EXHAUST VENTILATION

Local exhaust ventilation captures air contaminants at their source.

It is necessary when:

- the contaminant is toxic or corrosive (such as lead fumes, acid mist, solvent vapour),
- contaminant levels are high,
- contaminants must be filtered out before released into the air, or
- the process gives off heat.

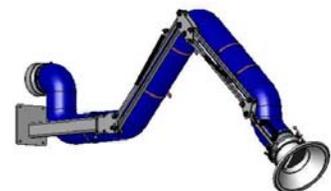
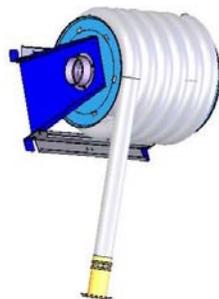
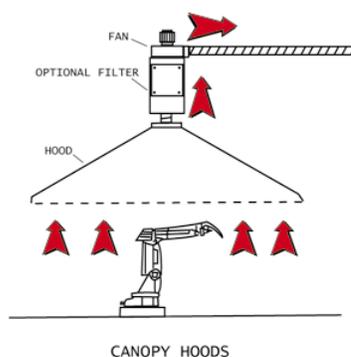
It is most effective because:

- it minimizes employee exposure to contaminants,
- the volume of exhaust air is much less than for general ventilation,
- the contaminant can be collected for disposal or recovery,
- equipment in the workplace is protected from heat and corrosive substances, and
- employees may not have to wear respiratory protection.

THE SYSTEM HAS FIVE MAJOR PARTS

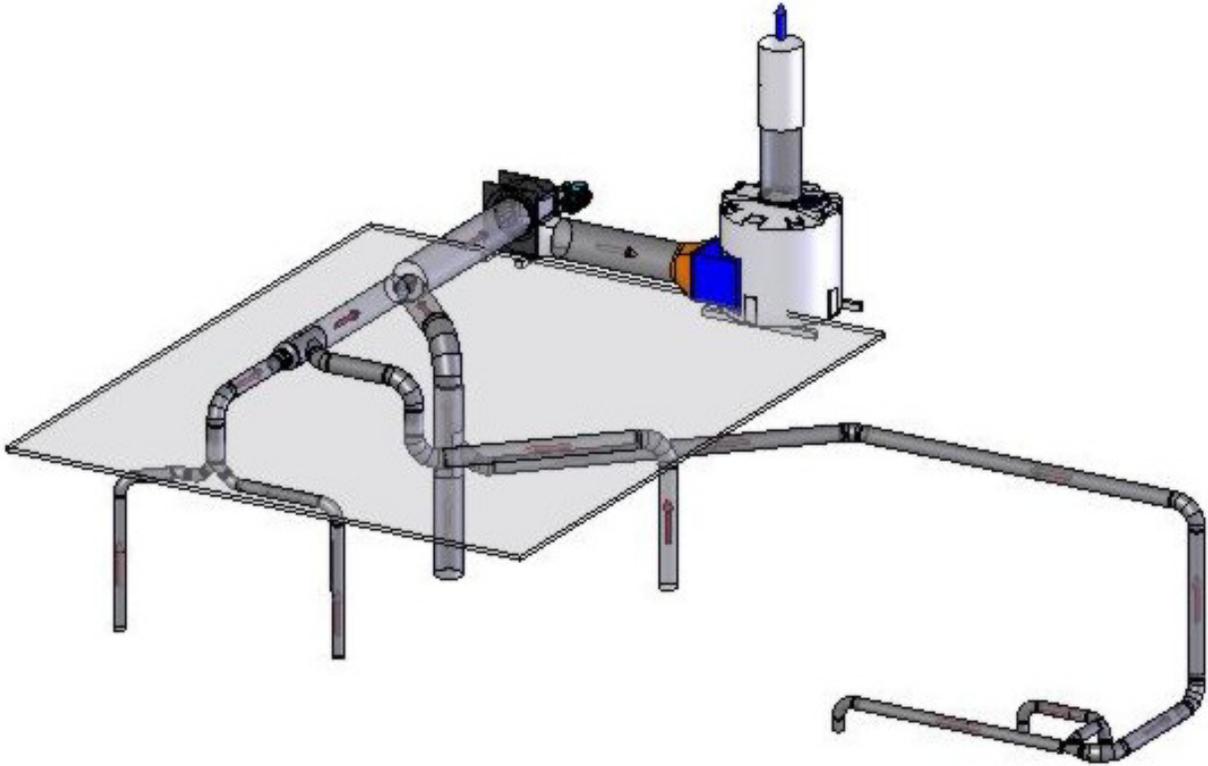
1. The Hood

Hoods come in a variety of designs. The one you choose should enclose or be located as close as possible to the contaminant source and be matched to the particular process. The hood should be designed so it captures contaminants as they are given off.



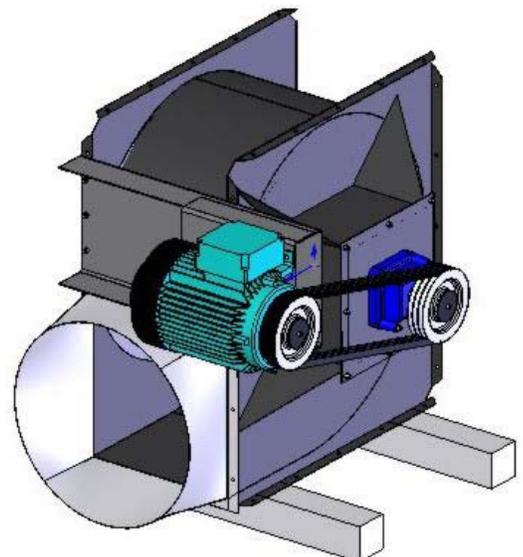
2. The Ducts

Ducts carry the contaminants from their source to an outlet point. Air velocity in the ducting must be high enough to prevent contaminants from settling in the system, but not so high that it causes vibration and noise problems. To ensure the correct balance is obtained, consult an Occupational Hygienist or Ventilation Engineer.



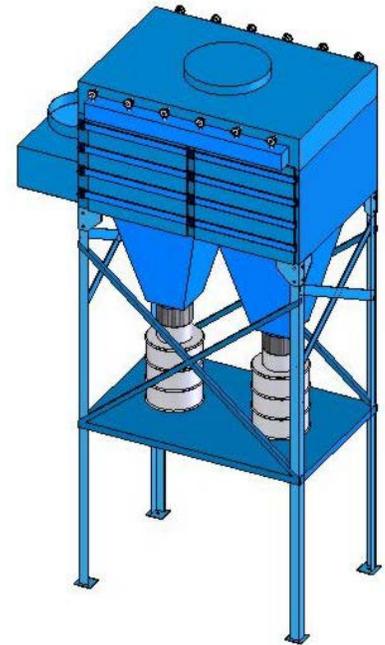
3. The Fan

The fan is the heart of the system, creating movement of air to shift the contaminants. Centrifugal fans are generally best for high pressures, and axial fans are best for low pressure/high volume applications.



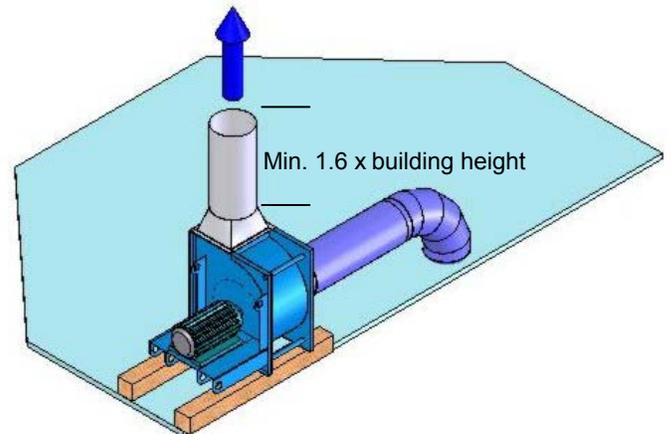
4. Filters

Filtering equipment captures contaminants in the extracted air and lets clean air continue through. The filtering equipment you install will depend on the type and volume of contaminants.



5. Discharge Stack

Releases exhaust gas into the air. It must be high enough to avoid gas re-entering the workplace and make sure contaminant levels on the ground are within clean air standards. Stacks should be at least two metres above the highest roof or adjacent building and away from air inlets. Weather caps aren't a good idea as they can hinder vertical discharge. Good practice requires a minimum air velocity discharge of six metres a second (1200 fpm).



MAINTENANCE

Maintenance and cleaning are vital to the efficiency of local exhaust ventilation systems. Easy access for cleaning and removing captured contaminants and test points to carry out checks are both important considerations when installing a system.

Whatever ventilation system you choose, it must be capable of capturing the maximum surge of contaminants.