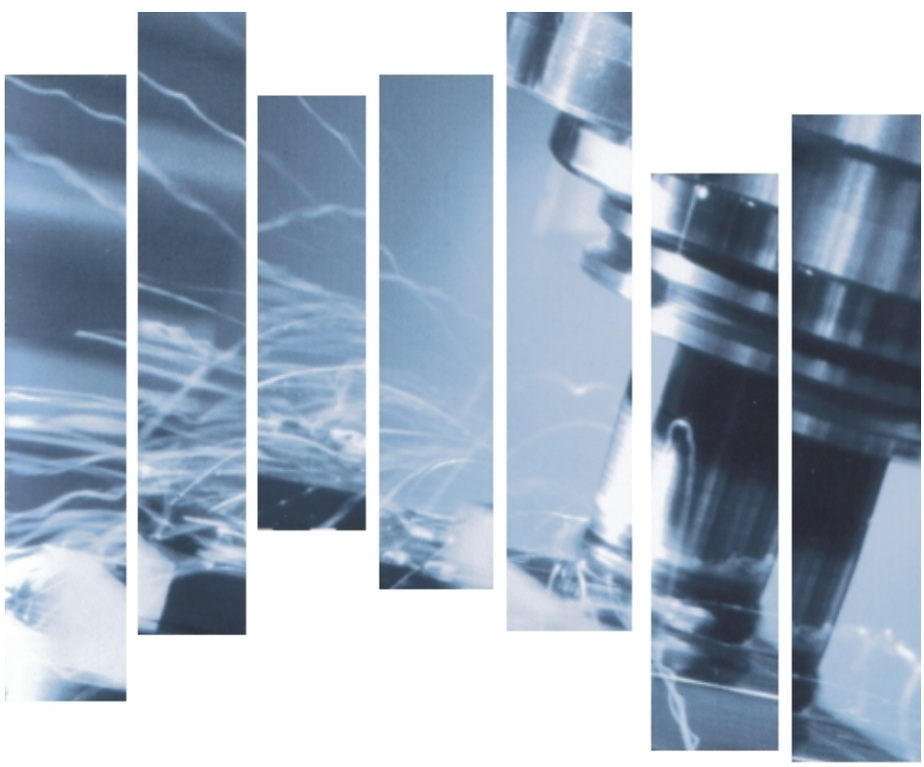
FILTER ON
India Pvt. Ltd.
Healthy air. Healthy profits

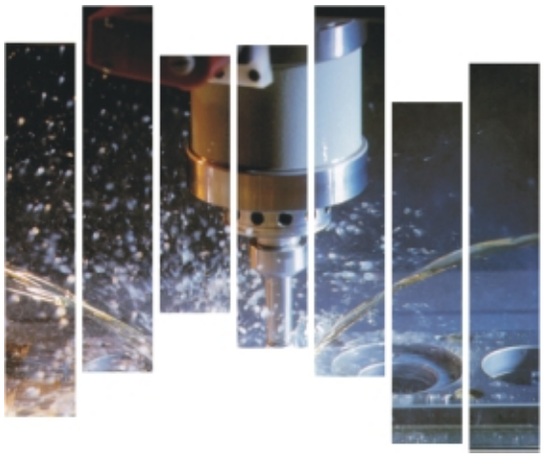
Oil Mist / Fumes and Smoke Eliminators



Protect

work environment
CNC machines
precious health

ISO 9001 QM011



Oil mist / fumes & smoke

elimination in CNC machine shops
A major concern today

Pollution risks

CNC machines are usually installed in air-conditioned machine shops where the problems of indoor pollution, suffocation, oil mist, smoke and fumes persist.

The coolant oil - the source of pollution - generates oil mist and smoke which remain suspended in the work environment; get accumulated and result in polluting the working atmosphere.

This is not acceptable to ISO - 14001 and Environmental Management System (EMS) pollution control norms.

Health Hazard

Oil mist, smoke and fumes give rise to dirt, unpleasant odors, skin and eye irritation, respiratory diseases, etc. This definitely affects health; lowers efficiency and ultimately, the machine shop productivity.

Machine breakdown hazard

Besides polluting the shop environment, oil mist particles and dust continuously get deposited on the delicately designed machine controls, PCBs, microprocessors, optical instruments and the like. This results in component damage, malfunctioning of the machines, repeated breakdowns and ultimately, loss of valuable production time.

Higher power requirement

Oil mist and fumes get deposited on cooling coils of air-conditioners, other heat exchanging equipment and adversely affect them reducing heat transfer efficiency. Thus, to achieve the same cooling effect, a lot more power is consumed. This loss is significant if one calculates the long-term impact. All this again is detrimental for the machine shop productivity.

Methods of oil mist & smoke elimination

Limitations of conventional systems

The problem of oil mist elimination can be tackled with media filtration with or without HEPA, centrifugal separation, and Electrostatic Precipitation mist elimination systems (ESP).

The effectiveness of the centrifugal process is limited to fluids only. Smoke and solid particulate contaminants pass through or impede the operation of the centrifugal mist eliminator. Vibrations are generated in centrifugal collectors because of the unbalanced rotating bowl which requires extensive maintenance. Hence, centrifugal collectors are not suitable for direct mounting on precision machines. Replacement of their motor bushings and winding is also a frequent problem.

HEPA, though quite effective, pose the problem of air restriction and drive up your power consumption. Any type of media filter is not very efficient for wet contaminants. Media filters need to be changed quite frequently. In improperly chosen or installed smoke and oil mist eliminators, only mist and oil particles get filtered leaving smoke to escape the collectors' unit.

All this leaves you with the only best option i.e. Electrostatic Precipitation mist eliminators (ESP).

Applications

- Gear cutting, Gear grinding
- Hobbing, Centerless grinders
- 5-Axis grinding
- Tool & cutter grinding machines
- Screw machines
- Induction hardening
- Induction heating
- Oil quenching in heat treatment
- EDMs
- Thread grinding machines

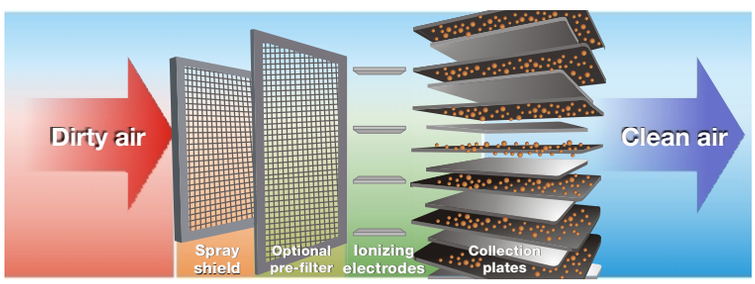
and many more applications where oil mist and smoke are generated in the process.

Electrostatic Precipitation
The technology for oil mist & smoke elimination

How it works

Filter On oil mist collectors use Electrostatic Precipitation technology for oil mist and smoke elimination and provide the most healthy indoor air quality.

As the air stream passes through Filter On mist collectors, it goes through an ionizing section followed by a collecting section. The ionizer applies an electrical charge to any airborne contamination that floats through it. Smoke, mist and particles are now electrically charged. In the next section, the air stream passes through a series of oppositely charged collection plates. The air pollutants are attracted to the collection plates; stick to them and get neutralized.



The small oil particles form a larger droplet of oil which then drips down into an oil collection tank at the bottom of the unit. This tank is further drained into the oil tank of machine tool on which the mist collector is mounted.

Benefits of ESP

Because the filtration device uses plates instead of woven filter media, the air stream can easily pass through with minimal resistance. Thus, as compared to any other filtration system, this system consumes lowest power for the fan / blower which is huge. In fact, many times the power saving for 1-2 years is more than the cost of the mist collector itself.

Electrostatic oil mist eliminators continuously collect and drain fluid which also protects and lubricates the cells. The filtration plates in such systems can be washed and reused whenever necessary. Periodic cleaning is the only maintenance they require. Like conventional filters, they need not be replaced frequently. This again saves recurring expenditure.

Perfect, long-term solutions from Filter On

Individual oil mist & smoke elimination systems

Individual oil mist eliminators extract pollutants at the generation source before the pollutants spread out. For machines with closed cabinets, the suction of fumes is through a hose pipe connected to the exhaust port of the cabinet. For open type machines, suction hood and hose arrangement is made. This system is ideal for machine shops where cumbersome overhead ducting is not possible. The pollutants pass through the air filtration unit where they are trapped electrostatically to give clean, healthy air back without any loss of cool air.

About us

Filter On India Pvt. Ltd. has been dedicated to the enhancement of Indoor Air Quality (IAQ) since 1983. Filter On has developed most sophisticated and state-of-the-art technology for filtration and elimination of industrial pollutants, mist, dust, smoke, fumes, etc. to ensure environment-friendly, healthy and wholesome surroundings. Filter On adopts a holistic approach towards the customer's problem and comes out with the perfect solution after a careful study, research and development. Filter On solutions are most effective as well as affordable with the advanced technoloy of Electrostatic Precipitation. Filter On is all the time striving for product development and refinement for improved solutions. With more than 1000 installations all over India, today Filter On can rightly claim market leadership.

Undertaking turnkey projects in shop-floor air pollution control systems right from concept to commissioning is the speciality of Filter On.

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S. No. 36/2/2, Narhe Industrial Area
At Post Narhe, Tal. Haveli, Pune - 411 041 INDIA
Tel. : +91-20-6470 2178, 2512 2036
Fax : +91-20-2545 5539
E-mail : filteron@hathway.com

Registered Office
New Gitanjali, Flat No.5, Plot No.59
Ideal Colony, Kothrud, Pune - 411 038 INDIA
Tel. : +91-20-2546 6231
Fax : +91-20-2545 5539
www.filter-on.com

Centralized oil mist and smoke elimination systems - Only from Filter On

Filter On is the only company that offers you unique Centralized oil mist elimination systems which are specially designed as per the customer's specific requirements.

Centralized systems are ideal for machine shops with a large number of machines. Oil mist and smoke from all these machines are collected from the point of generation and are electrostatically filtered in the Centralized system. The filtered, purified air is released back into the machine shop.

Filter On Centralized oil mist and smoke elimination systems are greatly advantageous due to lower installation costs and lesser and easier maintenance. Above all, the systems offer flexibility of expansion. The system can be expanded with minor modifications when more machines need to be installed in the machine shop.

Your benefits with various systems from Filter On

- **No filter replacement costs**
- **Lowest running costs**
- **Highest efficiency**
- **Ability to trap even smoke**
- **Low power consumption**

Business associate

Oil mist / 0507 / 2K / kaleidoscope@vsnl.com