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

Filter On Electrostatic Air Filtration Systems

Your greatest benefits

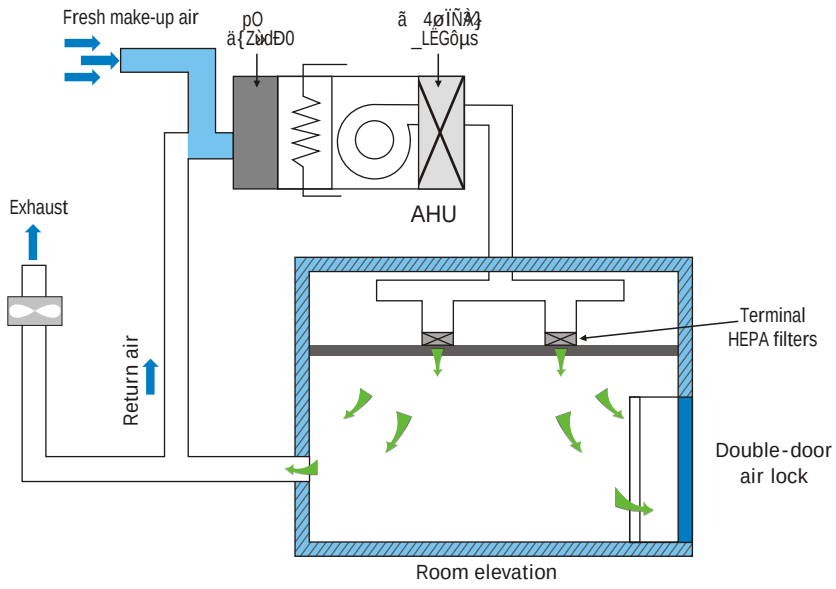
- HEPA filters' life enhanced up to 3 to 4 times
- Great power saver systems
- Reduced particle count
- Reduced bio-load

ISO9001:2000
Certified Company.

Filter On ESP Filtration Systems

Conventional HVAC systems

Conventional clean room systems



Present users of conventional clean room HVAC systems invariably face the following limitations.

- Inefficient pre-filtration

Generally, 15 micron HDPE filters and 5 micron Microvee fine filters are used in clean room systems as pre-filters to HEPA. However, actually more than 95% of the particulate & bio-microbes load in a clean room environment is of submicron size. Thus, all the major load of fine particles directly passes on to HEPA and chokes them early. Because of this, the overall pressure drop of the system increases. This results in higher power consumption of blowers for the same air changes of air flow.

- Frequent filter replacement

As HEPA filters get choked early, the replacement frequency is also more, which leads to higher recurring expenditure.

- Downtime losses

Frequent replacement of HEPA filters leads to longer shut-downs, causing irrecoverable production losses.

- Risk of multiplying bio-load

In case of media filters, the particles, along with various micro-organisms like bacteria, molds, fungus, etc. also get trapped in the upstream side of the filter. Because of these, bacteria colonies begin to form and multiply in the upstream side which is very dangerous for the system. Through ruptures or leaks in the filter elements, all such colonies can get transferred in the clean room environment and can spoil the entire production batch in case of pharmaceutical units.

The most innovative and effective solution to overcome the limitations of conventional clean room HVAC systems is to use Filter On Electrostatic Precipitator (ESP) type Filtration Systems.

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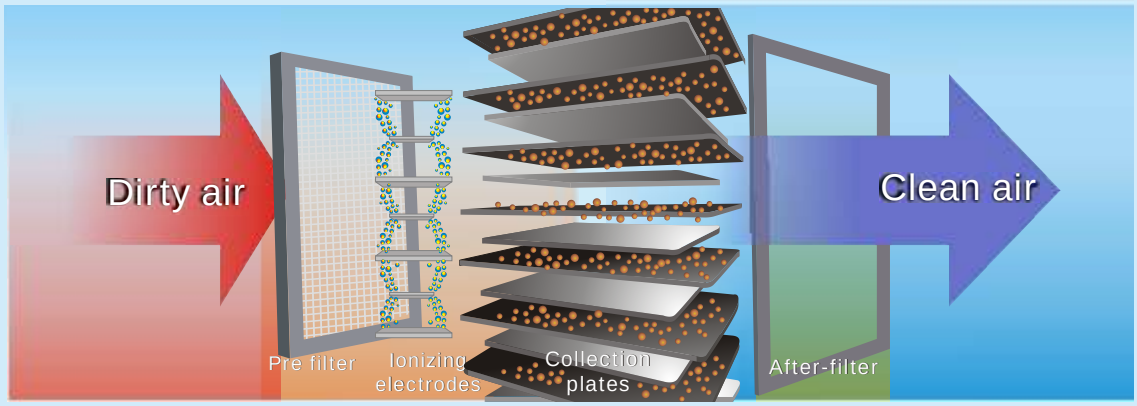
Electrostatic (ESP) Filtration Technology
For enhancing the performance of clean rooms



How it works

The technology is based on the principle of two-stage electrostatic air filtration. Fine sub-micron suspended particles are electrostatically charged using high-voltage electric field, which then get attracted and precipitated on opposite charged electrode plates.

Technological advantages

Filtration efficiency

Filter On Electrostatic Filtration Systems offer high efficiency even for small submicron particles which form the maximum percentage of floating and suspended particles in air. The efficiency of ESP is equivalent to EU9 grade filters.

Lowest pressure drop

As compared to any type of filter having EU9 equivalent filtration efficiency, ESP offers very low pressure drop i.e. only 3-6 mm WG.

Permanent filter

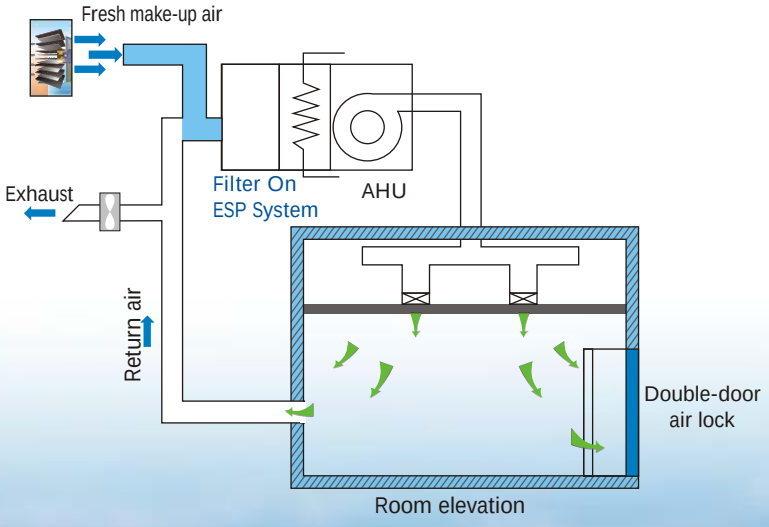
Since ESP is made of Aluminum plate electrodes, it never requires any replacement over the lifetime (15-20 years). It only requires periodic cleaning. So, no replacement costs at all.

Installations of Filter On Electrostatic filtration systems

Filter On M-03 model of required capacity can be introduced as a pre-filteration unit either at fresh air intake end or can be attached to the AHU in the mixing chamber.

Filter On systems can be introduced at the mixing chamber of fresh and return air just before the cooling coils of AHU. For Class 100,000 clean rooms, as well as for dust proofing and dust control systems ESP can be introduced just before the cooling coils. ESP alone can achieve class 100,000 environments if proper air changes (generally 20-25 per hour) are maintained in the system. Also, in cases where HEPA filtration is a must, ESP can act as an efficient pre-filter to offer various benefits.

At fresh air - For class 10,000 and more stringent clean rooms, ESP can be introduced as efficient fresh air filter to have the same benefits.



Benefits of FIlter On Systems

Blower motor section

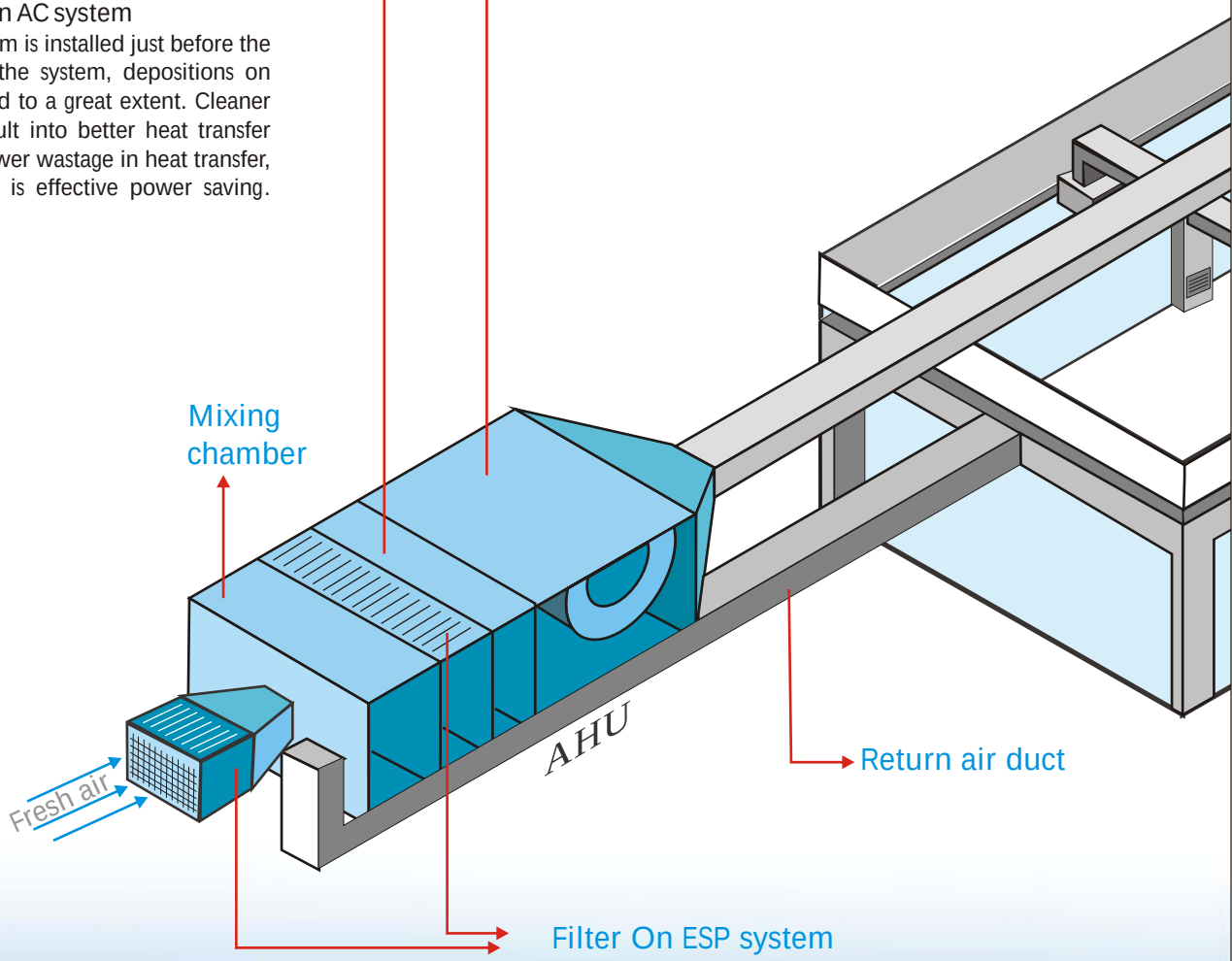
Lower system pressure drop

Because of very low pressure drop caused by Filter On systems and subsequent reduced choking of HEPA filters, the overall system pressure drop reduces drastically. Thus, there is lesser load on the blower, causing subsequent power saving of the blower motor. It is possible to reduce the number of air changes required to achieve the same particle count with ESP as pre-filter. This further adds to the power saving.-to the tune of 25-30%

Cooling coil

Power saving on AC system

As Filter On system is installed just before the cooling coils in the system, depositions on coilfins is reduced to a great extent. Cleaner cooling coils result into better heat transfer efficiency and lower wastage in heat transfer, which ultimately is effective power saving.



Filter On ESP system

Zero replacement cost on pre-filtration

Since ESP is a permanent filter, there is virtually zero replacement cost with Filter On system as pre-filters.

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Supply air duct

Duct cleaning cycle reduced

Since ESP takes care of the major dust load, the need for frequent duct cleaning and the subsequent down-time get reduced .

Clean Room

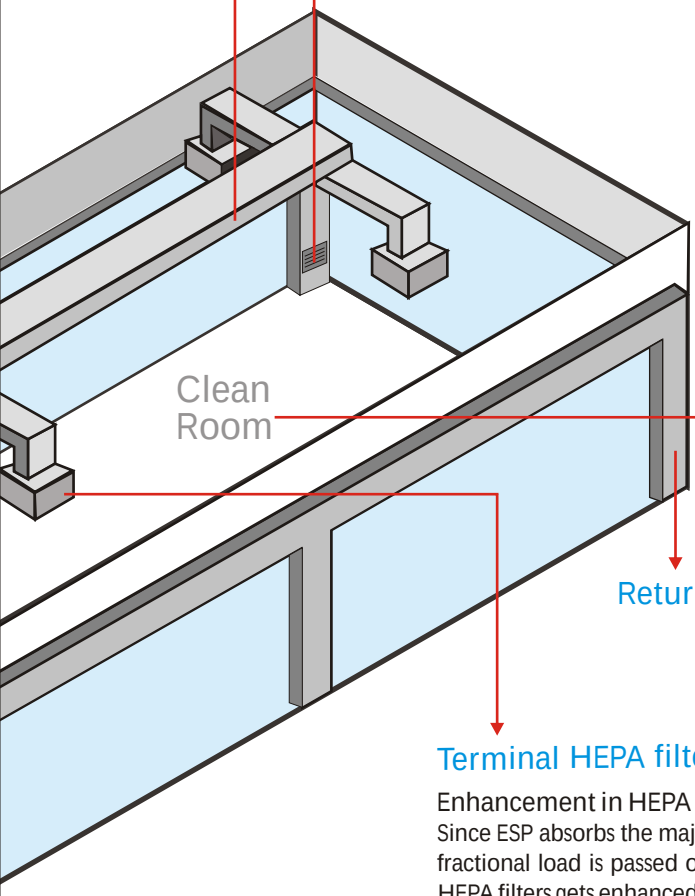
Improvement in particle count

Since Filter On systems offer very high filtration efficiency for submicron particles as compared with any other conventional pre-filtration system (like microvee/5 micron etc.), there is remarkable improvement in the particle count in the room with the same air changes as the air gets filtered with higher efficiency.

Reduction and control of bio-load

ESP works on high voltage electric corona discharge. Because of this, the microbes traveling through this high voltage electric field get killed and the bio-load in the room environment is controlled effectively. On the other hand, in case of media-type filters hazardous bacteria colonies are formed on the upstream side. There is a possibility of the filter getting punctured and all these microbes entering the clean room environment. Filter On systems can very effectively prevent such a situation.

Return air grills



Return air risers

Terminal HEPA filters

Enhancement in HEPA filters' life

Since ESP absorbs the major particle load in the system, only fractional load is passed on to HEPA filters. Thus, the life of HEPA filters gets enhanced. It is observed that practically their life gets enhanced by almost 400% as compared to a conventional system. This means a great saving in replacement costs of HEPA.

Reduced downtime for filter replacements

Production shutdowns required for HEPA filter change are reduced leading to lower wastage of production time and increased production.

Benefits of ESP

- Improvement in particle count
- Reduction in bio-load inside the clean room
- Power saving in blower, as well as Air-conditioning system
- Reduction in operating costs of filter replacement & duct cleaning

Clean air class essential at different locations

Health Care Units	10	100	1000	10,000	100,000
Aseptic Filling Room					
Aseptic Receiving Area					
Aseptic Changing Room					
Solution Preparation Room					
Clean Changing Room					
Material Entry Air Locks					
Operation Theaters					
ICU Rooms					
Micro Electronic Processing	**10**	**100**	**1000**	**10,000**	**100,000**
Photolithography					
Semiconductor Processing					
Multilayer Processing					
Fabrication of CDs					
Surface Treatment Zone					
ICs & Hybrid Circuit Making					
TV Transmitter Control Room					
Optic Cable Manufacturing					

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Range of Products

Model M-03 Modular Electrostatic Air Filters

M-03 / 16k Filter Elements M-03 / 50K

Suitable size. Compatible to AHUs from 500 to 72000 Cu Mtrs / Hr capacity

Application areas of Filter On Filtration Systems

Health Care

- Health care facilities
- Hospitals - OTs / ICUs
- Pharmaceutical manufacturing
- Medical devices manufacturing
- Biotech laboratories
- Food products processing

Micro Electronics

- Semiconductor manufacturing
- Disk drive manufacturing
- Hybrid circuits / IC manufacturing
- Hybrid TV picture tube manufacturing

Others

- Aerospace engineering
- Photographic processing
- Offices of consultants, BPOs, IT industries
- Turbo-charged diesel engines, gensets, turbines
- Transmission rooms at TV centers
- Compressors, H.V. alternators
- Process industries (textile, spinning, ceramics, cement, steel, etc.)
- Power plants
- Nuclear fuel processing

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 indoor pollutants like mist, dust, smoke, fumes, microbes, 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.

With our expertise in application engineering & emphasis on R&D, we can supply ESP filteration systems that would certainly prove a value addition to your present arrangements and assure enhanced air quality & substantial savings. Filter On technology is also capable of adapting & bettering itself for newer applications as per specific customer requirements.

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