

COMBAT CORROSION

Maximise uptime of sensitive electronic equipment
With Gas Phase Filtration Systems



Deep Bed System



Thin Bed System



Corrosive Molecular Gaseous and Particulate Contamination Removal

Atmospheric air, especially in manufacturing industry, is laden with gaseous molecules, which are corrosive in nature like hydrogen sulphide, sulphur dioxide, nitrogen oxides, chlorine, ammonia, ozone, mercaptans, hydrogen fluoride, VOCs etc. These are usually generated during the manufacturing processes, and eventually contaminates the air.

Effects of Contaminated Air

- Corrosion of electronic & electrical process controls
- Degradation of organic matter
- Foul odour
- Personnel ill-health



Gas Phase Filtration system is the ideal and most cost-effective solution to these problems. It's unique process not only cleans the contaminated air of suspended particles and corrosive gases but also eliminates the odour, making the working environment healthy for you and your equipment.



Deep Bed System

Thin Bed System

Features

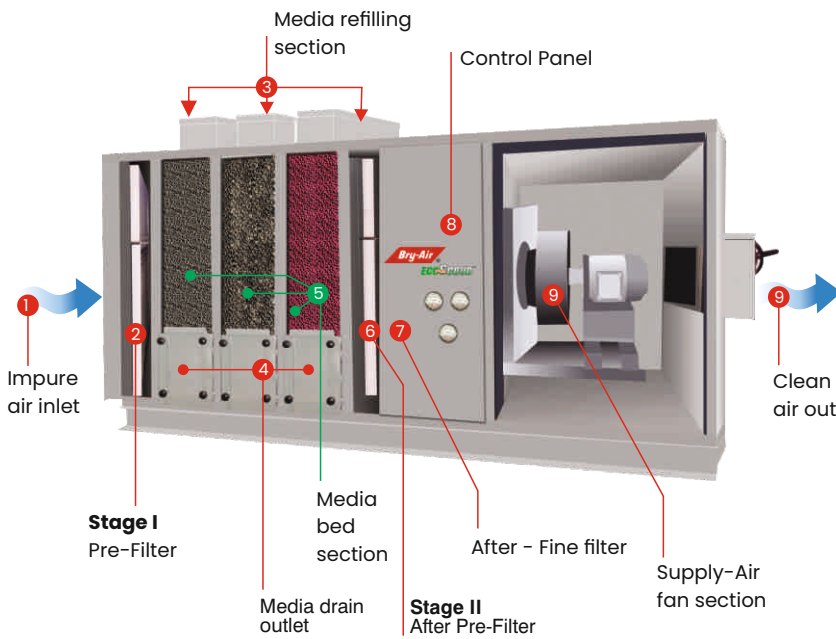
- Multi-bed design provides flexibility to use variety of media for removal of multiple contaminants
- Confirms and helps meet ISA 71.04-2013 standard of air quality
- Affirms to all industry standards such as EIL, PDIL, Telecom, TCE, NTPC
- Standard variants available in 850-3400 CMH (500-2000 CFM) and can go to any size of CMH required
- Robust structural, steel frame construction, CNC fabricated and tightly welded structures
- Design flexibility for easy customisation
- Insulated units with double skin construction



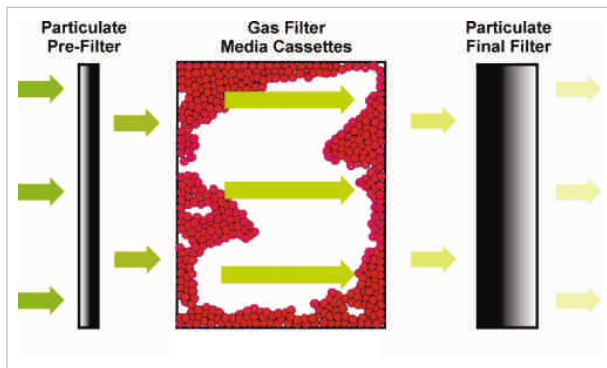
Deep Bed Systems

How Does it Work?

In the process, the contaminated air first passes through pre-filters which trap the suspended particles, and then through the required chemical media beds, which chemically neutralize remaining gaseous impurities. The chemical media can be activated carbon and/or activated alumina impregnated with proprietary chemicals, used alone or in combination – depending on the types and concentrations of the impurities present in air stream.



Deep Bed System (Internal view)



Deep Bed Systems

- Essentially consist of either single or multiple, perforated hollow housing(s), also called bed(s) filled with chemical media, of at least 305 mm (12" or 1') thickness. These beds are placed perpendicular to the direction of flow of air.
- Deep bed systems are used for 'Fresh air treatment & pressurization' applications in industry, wherein level of air contamination is very high and good quantity of media holding is a necessity for prolonged uninterrupted use, before media gets completely spent and replacement becomes inevitable.
- Deep Bed Systems are powered units of horizontal configuration.
- Key applications are petroleum & refineries, fertilizer & chemical plant, pulp & paper, data centers & server rooms, telecom towers, museums & libraries, sewage treatment plant, diagnostic labs, animal research labs, mortuary rooms

Common Contaminants and Their Sources

Sources	Contaminants
Pulp & Paper production	Cl ₂ , SO ₂ , H ₂ S, R-SH, organic vapors
Refinery & Petrochemicals	SO ₂ , NOx, Cl ₂ , NH ₃ , H ₂ S
Semiconductor industry	AsH ₃ , HF, NH ₃ , SO ₂ , NOx, CH ₄ , COOH, VOCs
Chlor-Alkali plants	Cl ₂ , Chlorine compounds, SO ₂
Fertilizer plants	HF, NH ₃
Steel Blast Furnaces	H ₂ S, SO ₂ , HF
Coke plants	H ₂ S, SO ₂ , HCN
Cement plants	SO ₃ , SO ₂ , NOx
Plastic manufacturing	NH ₃ , SO ₂ , VOCs including aldehydes & alcohols

Sources	Contaminants
Rubber manufacturing	H ₂ S, R-SH
Paint manufacturing	VOCs, Oxygenated VOCs
Aluminum manufacturing	HF, SO ₂
Battery manufacturing	SO ₂
Ore Smelting	SO ₂
Power Generation	SO ₂ , NOx, VOCs
Automotive Combustion	SO ₂ , SO ₃ , HCl, HBr, NOx, VOCs
Diesel Combustion	NOx, many VOCs
Food Processing	H ₂ S, R-SH, Aldehydes, many VOCs
Horticultural Cold Storage	C ₂ H ₄ , VOCs



Bry-Air[®]

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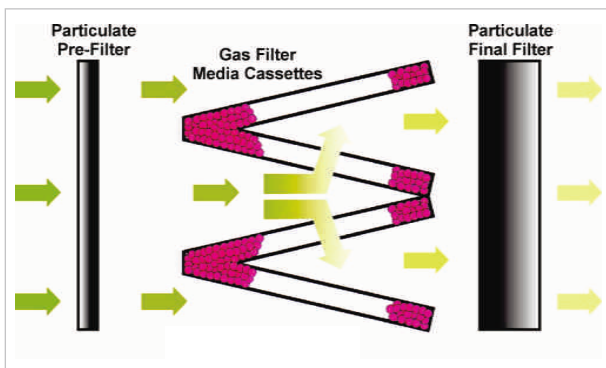
Thin Bed Systems

How Does it Work?

Bry-Air Thin Bed Scrubber is a self contained unit designed to provide re-circulated air at commercial and industrial sector. It is recommended for providing contaminant free air for selective electronics and electrical equipment.

Thin Bed Systems

- Consist of either single or multiple stages of hollow, perforated, retractable 'V'-shaped module(s), also known as cassette(s) filled with chemical media, of either 25 mm (1") or 75 mm (3") thickness. These cassettes are placed in the path of airflow. The other major parts include a set of pre-filters, final filters, fan/blower assembly and control panel, other than pressure-drop measuring gauges.
- Thin Bed Systems are used for 're-circulation' applications in commercial/industrial sector, as well as for 'pressurization' in industrial environments where air contamination levels are on the lower side. Media holding capacity and pressure drops are smaller than Deep Bed units, in this case.
- Thin Bed Systems can be powered as well as un-powered units of both horizontal and vertical configurations.
- Key applications are petroleum & refineries, fertilizer & chemical plant, pulp & paper, data centers & server rooms, telecom towers, museums & libraries, sewage treatment plant, diagnostic labs, animal research labs, mortuary rooms



Thin Bed System

Why Bry-Air ?

- High efficiency and reliability.
- Self-contained re-circulatory and fresh air units, offered, both in horizontal and vertical configurations.
- Removes both corrosive and odour causing gases and VOCs from air.
- Robust structural steel frame construction, CNC, fabricated powder coated units.
- Insulated units with double skin walls and panels (optional).
- Microprocessor based Digital Control Card (optional).

Removes Contamination

Corrosive gasses emerging from nearby industrial areas, landfill sites and open drain

- PM5
- PM10
- SO_x
- NO_x
- H₂S
- Cl₂
- NH₃
- O₃
- HF
- VOCs

Damage Caused by Harmful Gases

- Increased contact resistance
- Leakage in current and short circuits
- Deterioration of circuit lines and connectors
- Mechanical deterioration of printed circuit boards
- Leakage of EMC - shielding
- Creep corrosion

Chemical Media

BRYSORB™ series offers range of combination of activated carbon and activated alumina impregnated with various impregnates which neutralizes various gaseous contaminant such as H₂S, SO₂, Cl₂ and NH₃, and widely used for gas phase filtration.



BRYSORB™ 508

A UL certified, activated alumina impregnated with KMnO₄ for effective removal of sulphur oxides, hydrogen sulphides, ethylene and aldehydes



BRYSORB™ 508 BLEND

A perfect blend of BRYSORB™ 508 and BRYSORB™ 520 for optimum removal of harmful and odourous gases such as ozone(O₃), hydrogen flouride (HF) and various other VOCs



BRYSORB™ 515

A UL certified, activated alumina and activated carbon impregnated with potassium hydroxide (KOH) for effective removal of chlorine and sulphides



BRYSORB™ 520

A High performance chemical media for effective removal of odourous gases such as nitrogen oxide, ozone, formaldehyde and other various VOCs



BRYSORB™ 525

A special grade activated carbon impregnated with phosphoric acid(H₃PO₄) for effective removal of ammonia (NH₃)