

Fourpeak Agglomerator Electrostatic Air Filter

Applications

The AES Environmental Fourpeak Agglomerator combines the best features of both electrostatic and media type air filters. They are designed for use in applications where high efficiency filtration is demanded to provide a pollution free environment and still provide savings on long-term building maintenance.

Recent installations of these units are proving critical for the removal of carcinogenic diesel exhaust fumes associated with major roadways and freeways.

Description

Power pack: the pack operates from 200/240V single phase AC power supply and provides 13kV DC to the ionizer and 6.5kV to the cell plates. The output of the power pack is automatically protected by a saturable reactor which minimises nuisance shut-downs and prevents damage to power pack components during extended short circuits. A controller in the saturable reactor circuit permits precise adjustment of ionizer and cell voltage.

Indicator lights indicate normal or short circuit conditions. Power packs are fitted with extra remote indicator terminals as standard.

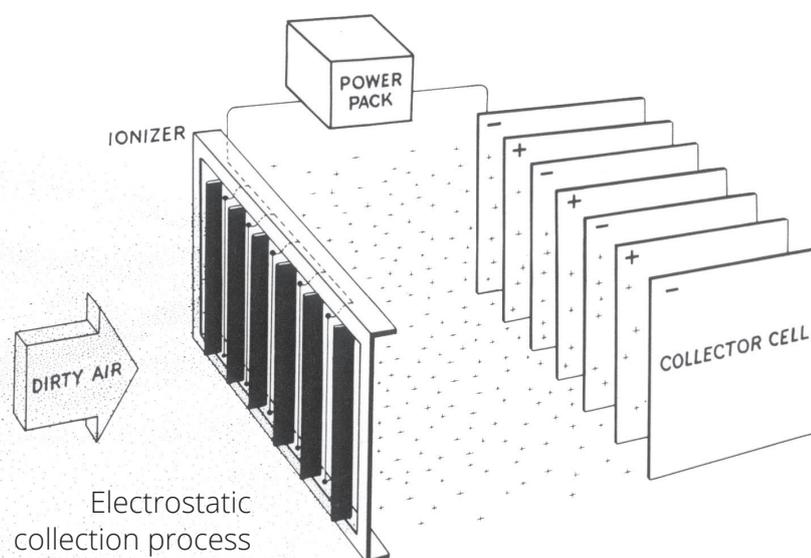
Ionizer: the critical component of the ionizer is the fine tungsten wire, specifically selected to provide consistent voltage and overcome stress induced failure when combined with our unique spring arrangement.

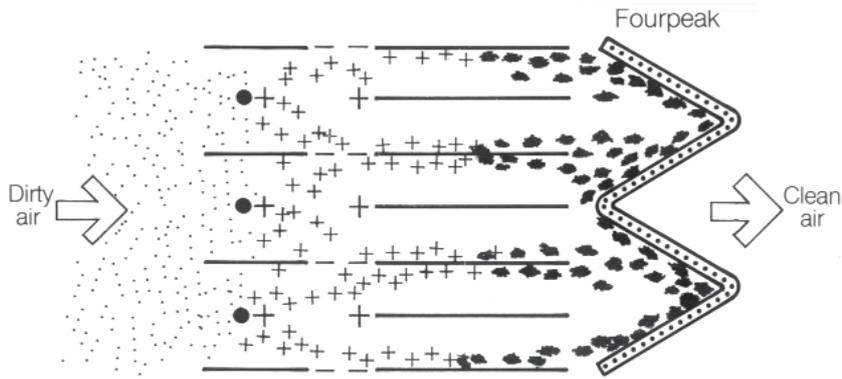
Collector cell: the cells provide a plate area equal to seventy times their frontal area.

All aluminium construction is used with relatively heavy 0.66mm plates and a generous 8mm cell spacing to ensure a rigid cell that is not prone to flash-over. Each collector cell is factory tested for current leakage before despatch.

Fourpeak: a polyester media consists of special adhesive-treated fibre with scrim backing that is safe to handle and will not shed fibres into the airstream.

The frame and wire-work are coated to prevent media snag and provide excellent corrosion resistance.





Maintenance

At regular intervals, determined by local dust conditions, when the media has become loaded with dirt, the Fourpeak filter will need to be replaced. The collector cells will only require yearly inspection with a full strip and clean about every three years.

The power pack and ionizer voltages should be checked by a qualified electrician at least every twelve months. In laying out a filter system it is recommended that there is 1 metre space both before and after the filter for maintenance purposes.

Performance

The initial operating resistance of a Fourpeak Agglomerator is 42Pa. at rated capacity. Units are available in sizes from 944 L/s up to 90,000 L/s capacity.

Efficiencies of 87% to AS1132 No.1 test dust are constantly achieved at rated capacities. Independent studies have shown that efficiencies of up to 95% at 0.1 micron are also recorded. Please contact your nearest AES Environmental office for a fully engineered solution.

Principle of Operation

The AES Environmental Fourpeak Agglomerator consists of four major components - the ionizer, the collector cell, the power pack and the Fourpeak filters. Dirty air enters through the ionizer, which consists of a number of fine tungsten wires suspended between flat ground electrodes. A strong electrostatic field is set up between the wires and ground plates by a 13kV DC supply from the power pack.

The field is sufficiently strong to charge every particle which then passes through the collector cell which has parallel plates alternatively charged with 6.5kV DC supply from the power pack. The charged particles are attached to the plates where they impinge and form thick layers of dirt. As the dirt builds up into a unified mass, lumps flake off and are carried by the airstream onto the Fourpeak media. The Agglomerator particles are now of sufficient size to become trapped and held by the media. When the media becomes loaded with dirt, it is replaced.

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In keeping with our policy of continuing product improvement, we reserve the right to alter specifications without notice.

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