

ONLINE PULSE JET BAG FILTERS

In this type of Bag filter, bags are cleaned row by row, even when the dust laden gas is filtered. The sequence of Filter cleaning is controlled automatically by a sequence control Timer; It gives signal to solenoid operated pulse valves which direct the High pressure air pulse to Filter Bags.

Bag Filter is supported from the ground on structural legs. A caged ladder provides access to the top of the unit for maintenance.

Dust laden air enters through the hopper by suction . The heavier dust particles fall off at the entry itself, while the lighter dust gets carried upward to the bags. The dust gets deposited on the outer surface of the bags and clean air moves out from the center of the bags and escapes out from top air outlet.

The dust collected on the outer surface of bag is removed in a pre-determined cycle by a momentary pulse of high-pressure compressed air. The compressed air moves from an air reservoir or compressed air header, via the particular pulse valve into the compartment manifold and thereon into the bags, in the row beneath it.

Due to the pressured entry of compressed air into the bags, the bags get inflated. Thus the dust is collected on the bag as flakes falls down. Soon the bag comes back to its original position and the cleaning process is completed.

Dust flakes fall from the sides of the hopper and slide into the rotary air lock valve. As the valve travels clockwise, the dust trapped in between the vanes gets discharged from the opening below.

Single Chamber Multi Hopper

Aircon Systems Incorporated Multi Hoppers in on-line type Bag filters. Easy to transport the same to site through Trucks & container .The Polluted gas enters the common inlet plenum, from there it flows to all modules; and undergoes filtration as in the regular unit. Similarly ,the cleaned gases travel back to the common outlet plenum from the individual clean air plenums, and then flow out through the outlet duct to the ID fan.

Casing Entry

Here the Polluted /dirty gas enters the casing through the inlet-cum-bypass damper, if applicable, into a central chamber formed by perforated sheets. The gas flow towards the bags is partially upwards from below the sheets, and partially through the perforations, ensuring the separation of heavier dust and better gas distribution respectively. With this we are maintaining very Low cane velocity.

The lighter dust gets carried upward to the bags. This gets deposited on the outer surface of the

bags and is removed by a pre-determined cycle by a momentary pulse of high pressure compressed air.

Pre-separator Casing with Baffle

Cement industries needs large bag filter handling air volume, conventional bag filters have been found to be inadequate to handle large gas flows in excess of 4,00,000 m³/hr, due to severe limitations like high gas flow per bag, high velocity of gases through bag filter, higher pressure drop across filters, high space requirement due to bigger size filters and high compressed air consumption.

Aircon Offers Bag filter with following distinct advantages:

- Lower pressure drop across the unit
- Lower consumption of cleaning compressed air
- Longer filter bag life
- Lower noise level during operation

AIRCON also Offer the low pressure cleaning system uses a special immersion type header mounted pulse valve.

This system is designed to achieve:

- Highly efficient & quick pulse of cleaning air
- Lower pressure drop of cleaning air due to elimination of bend in pulsing system
- Effective Flushing of dust

This cleaning system is so effective that it achieves 30% more cleaning pressure on the bag. The impulse is built in 80 milli seconds instead of 125 mill seconds,

- Effectively clean the bag.
- Can clean bags up to 7 meters length.

Pitch of Bags

AIRCON Bag Filter has high Pitch i.e. centre to centre distance between the bags plays a very important role in the performance of the bag filter. With this filters efficiency in terms of handling very high gas flows & very high dust loads. The additional clear space allows the high amount of dust load to fall by reducing gas velocity between bags with almost negligible carry over separated dust. This also reduces the sliding friction at the bags caused by low dusty gas flow, enhancing the life of the Filter bags.

Specially Reinforced Cages

Conventional cages cannot be used in long bag filters as they tend to bend due to the excessive length. We use higher thickness wires for cages when the height of bag or cage is more than 4 m or over. This higher thickness ensures straightness of the cage which is very important to maintain the necessary space between the filter bags when fitted on the tube-sheet of the bag filter.

Fine Dust Filters

Here the gas enters into the bag filter tangentially. This gives the dust laden gas a circular motion, which helps in removing the heavy & coarser particles that are present in the gas stream. These particles are collected directly into the hopper.

Due to this process, only very fine particles move above and get collected on the bag surface. Thus the total dust load on bags is reduced, which helps in maintaining lower pressure drop across bags, lesser frequency of bag pulsing. This ultimately increases bag life. The gas entry is at casing bottom which also ensures separation of coarser particles from fine, by gravitational force. Due to their circular construction these bag filters can withstand more +/- pressure as compared to normal rectangular bag filters.

The circular construction of bag filter also ensures they are leak proof. The possibility of dust accumulation inside casing (on edges etc.) is eliminated. Due to the arrangement of bag as shown in the images each and every bag is exposed to the dust laden gas. Due to the swiveling arrangement shown, the top cover is pushed on one side during bag removal and hence there is room for lifting the top cover. Due to the special top cover & outlet plenum construction, the entry of outside air is avoided.

Flush Mounted – Circular / Bin Filters

Similar to the insert-able bag filter, the casing of the bag filter is circular instead of rectangular. This is normally used where the design pressures are either very high or it is a vacuum.