

PULSE JET BAG FILTER

CYCLONE SEPARATOR



**Ventech**<sup>TM</sup>

We handle AIR with care...

**INDUSTRIAL**

**AIR POLLUTION CONTROL**

**DIVISION**



[www.ventechsystems.com](http://www.ventechsystems.com)

ACID FUME SCRUBBERS

ROTARY AIR LOCK VALVE

# INTRODUCTION

Curbing Air Pollution in Industries is our business. We are one of the few companies who offer so many emission control solutions for today's diverse air quality needs. For past many years, VENTECH has offered State of the Art Equipment and Systems to combat the ever growing problem of air pollution.

VENTECH is your best choice for a full range of Industrial Air Pollution Control Systems from concept to commissioning.

## CYCLONE SEPERATORS

Ventech High Dust Collection efficiency Cyclone Separators are a Cost effective means for stringent particulate pollution control and material recovery. Cyclone Separator is used as a primary collector with or without bag filters, to separate dust of moderate to coarse particle size.

**Range : 400 mm diameter to 2400 mm diameter.**

**CAPACITY RANGE : 1,000 CMH to 40,000 CMH.**

### PRINCIPLE OF OPERATION

Cyclonic separation is a method of removing particulates from an air, gas or liquid stream, without the use of filters, through vortex separation. Rotational effects and gravity are used to separate mixtures of solids and fluids. The method can also be used to separate fine droplets of liquid from a gaseous stream.

A high speed rotating (air)flow is established within a cylindrical or conical container called a cyclone. Air flows in a helical pattern, beginning at the top (wide end) of the cyclone and ending at the bottom (narrow) end before exiting the cyclone in a straight stream through the center of the cyclone and out to the top. Larger (denser) particles in the rotating stream have too much inertia to follow the tight curve of the stream, and strike the outside wall, then falling to the bottom of the cyclone where they can be removed. In a conical system, as the rotating flow moves towards the narrow end of the cyclone, the rotational radius of the stream is reduced.

Depending on the application, extraction volume & desired dust collection efficiency, these sheet steel fabricated dust collectors are designed and manufactured in single, twin, or multiple stage configuration in which a number of cyclones operate in parallel. Application requirements and site conditions are other important selection factors that influence the choice of an appropriate version.

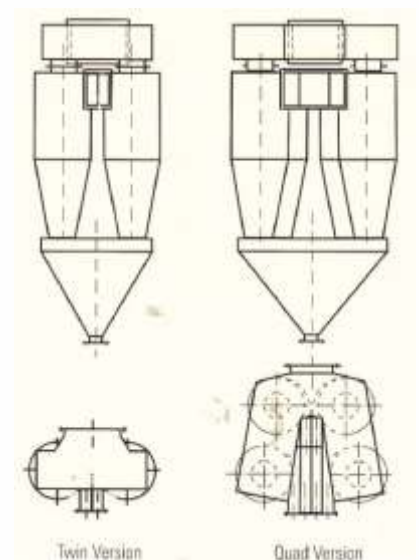
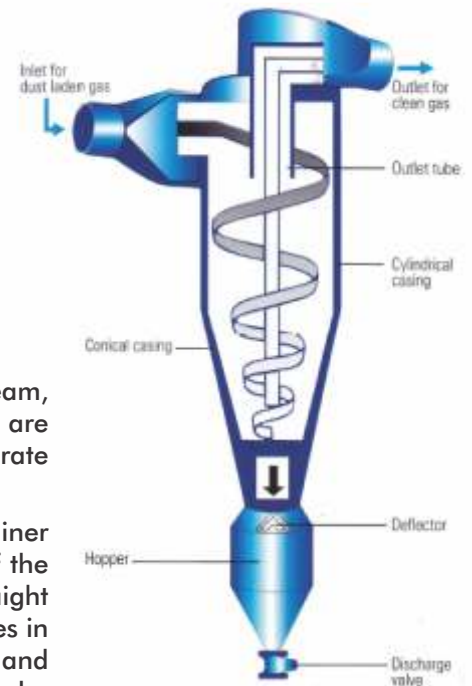
Dust discharge is affected through a motorised leak proof double flap dump valve or a rotary air lock valve"

### SALIENT FEATURES

- Modular and sturdy construction ensuring ease of assembly at site.
- Can Handle upto 40,000 CMH (in single configuration)
- Can be manufactured in Different Material of Construction like Mild Steel, Stainless Steel, MS with FRP Lining, depending on the application.
- Surface treatment is done using epoxy and other anti – stick coatings which ensures dust does not stick inside the cyclone surface. Powder coating available on request.
- Available in Left and Right Hand Configuration to suit site layout.

### BENEFITS

- Low Initial Cost
- Excellent pre-collector to Fine Dust collectors like Bag Filters, etc.
- Convenient and efficient cleaning of work area
- Highly durable
- No expensive filters involved therefore ensures ease of operation.
- Low maintenance costs .Works at high temperatures as well.



# PULSE JET BAG FILTERS

For particulate emission control, VENTECH Bag filters are setting industry standards.

Our wide assortment of Bag Filters offered in Rectangular and Cyclonic Configuration economically meet the need of most industrial applications for collecting dust and controlling pollution of Air and form an integral part of Dust Extraction and Collection Systems. A high dust collection efficiency of appx. 99.97% ensures that is widely used in most critical dust generation processes in the industry.

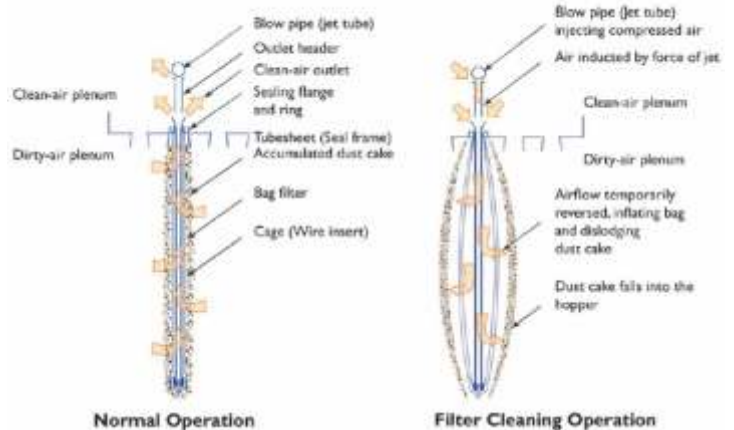
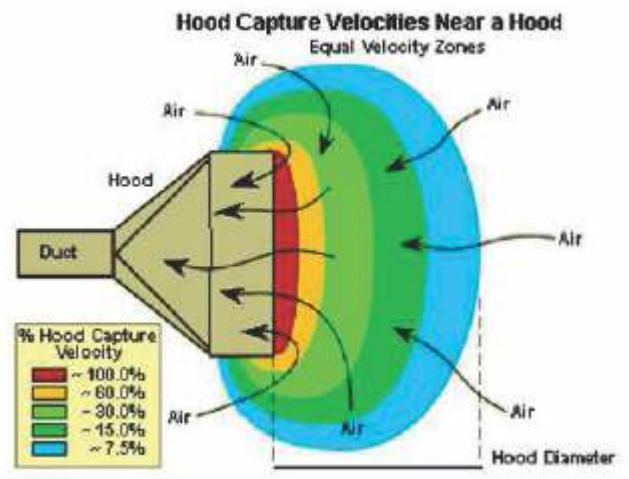
VENTECH pulse-jet system provides continuous, automatic bag cleaning.

Capacity Range: 1000 CMH to 3,50,000 CMH



## PRINCIPLE OF OPERATION

- Dust laden air enters the Dust collector through the hopper or casing depending upon application.
- An internal baffle distributes the dirty air within the housing. Dust laden air slows down as it enters the collector.
- Coarser dust particles drop into the hopper.
- The air dirty passes through the bags, dust is captured and collected on the bag exterior.
- On a timed cycle, a burst of compressed air is directed down through a venture at the top of bag.
- Filtered clean air flows to the clean air chamber and exhausts through outlet.
- Periodic compressed air pulsing removes accumulated dust from the bags with cleaning frequency and duration adjusted by solid-state timers or PLC.
- Dust falls into the hopper for collection through the discharge device.
- Since only few row of bags are cleaned at a time there is no interruption of airflow through the filter. This provides a smooth operating dust control or material handling system.



# PULSE JET BAG FILTERS

## SALIENT FEATURES

- Offered in Rectangular configuration for various industrial applications and Cyclonic Configuration especially developed for Rice / Flour Mills.
- Removable top access doors.
- Top bag removal.
- Durable construction of housing in modular form. Can be offered in variety of materials viz. Mild Steel, Stainless Steel, Etc.
- Bags in variety of sizes and type to suit site constraints.
- Heavy duty, smooth wire cages to support bags.
- Flanged air inlet, air outlet and dust discharge.
- The filter media is synthetic and non-woven needled felt. Other filter media are selected to suit application like these filters are offered in various types of fabric like polyester, glass fiber, etc.



DIFFERENTIAL PRESSURE  
GAUGE



SOLENOID PULSE  
VALVE



FILTER BAG & CAGES



SEQUENTIAL TIMER



FRL UNIT



# FABRICS & TECHNICAL SPECIFICATION

## FABRICS

TABLE OF TYPICAL CHARACTERISTICS

| Fabric Type        | Can Withstand Maximum Temp. | RESISTANCE TO |          |        |        |         |
|--------------------|-----------------------------|---------------|----------|--------|--------|---------|
|                    |                             | Flex Abrasion | Moisture | Acid   | Base   | Organic |
| Polypropylene      | 90° C                       | Good          | Excel.   | Excel. | Excel. | Excel.  |
| Acrylic            | 120° C                      | Good          | Good     | Good   | Good   | Good    |
| Polyester          | 130° C                      | Excel.        | Fair     | Fair   | Poor   | Good    |
| Nomex <sup>®</sup> | 190° C                      | Good          | Poor     | Poor   | Fair   | Good    |
| Fiberglass         | 260° C                      | Poor          | Excel.   | Excel. | Excel. | Excel.  |
| PPS                | 180° C                      | Good          | Good     | Good   | Excel. | Good    |

## TECHNICAL SPECIFICATIONS

| Model        | Power (KW) | Airflow (m <sup>3</sup> /h) | Filter Surface Area (m <sup>2</sup> ) | Dimension L x B x H (m) | Filter Cleaning Mechanism | Location |
|--------------|------------|-----------------------------|---------------------------------------|-------------------------|---------------------------|----------|
| MB 15 PJ 20  | 11.25      | 6000                        | 20                                    | 1.8 x 1.2 x 6.6         | Automatic Pulse Jet       | Outdoor  |
| MB 20 PJ 83  | 15.00      | 12000                       | 83                                    | 2.5 x 1.8 x 8.9         | Automatic Pulse Jet       | Outdoor  |
| MB 25 PJ 83  | 18.50      | 12500                       | 83                                    | 2.5 x 1.8 x 8.9         | Automatic Pulse Jet       | Outdoor  |
| MB 30 PJ 120 | 22.50      | 14750                       | 120                                   | 2.6 x 2.5 x 8.9         | Automatic Pulse Jet       | Outdoor  |
| MB 30 PJ 175 | 22.50      | 14750                       | 175                                   | 3.4 x 2.7 x 9.6         | Automatic Pulse Jet       | Outdoor  |
| MB 60 PJ 280 | 45.00      | 33000                       | 280                                   | 5.0 x 2.4 x 9.6         | Automatic Pulse Jet       | Outdoor  |
| MB 75 PJ 400 | 56.00      | 44000                       | 400                                   | 5.5 x 3.2 x 9.6         | Automatic Pulse Jet       | Outdoor  |

\*Bag house dust collectors are manufactured according to site specific requirement the table above has a few customized models.

# ROTARY AIR LOCK VALVES

Ventech has introduced a low cost solution to Dust Collector Valve needs. The dust collector valve is a lighter duty option for standard dust collection applications.

We are engaged in manufacturing and supplying of wide range of Air Lock Valves. These air locks are designed for use as an effective air lock system for constant material discharge and material metering .

Constructed with a robust cast iron body and cast iron end covers. Bearings are inboard and shafts are sealed with lip seals. All dust collector valves are direct driven with a right angle gearbox and motor.

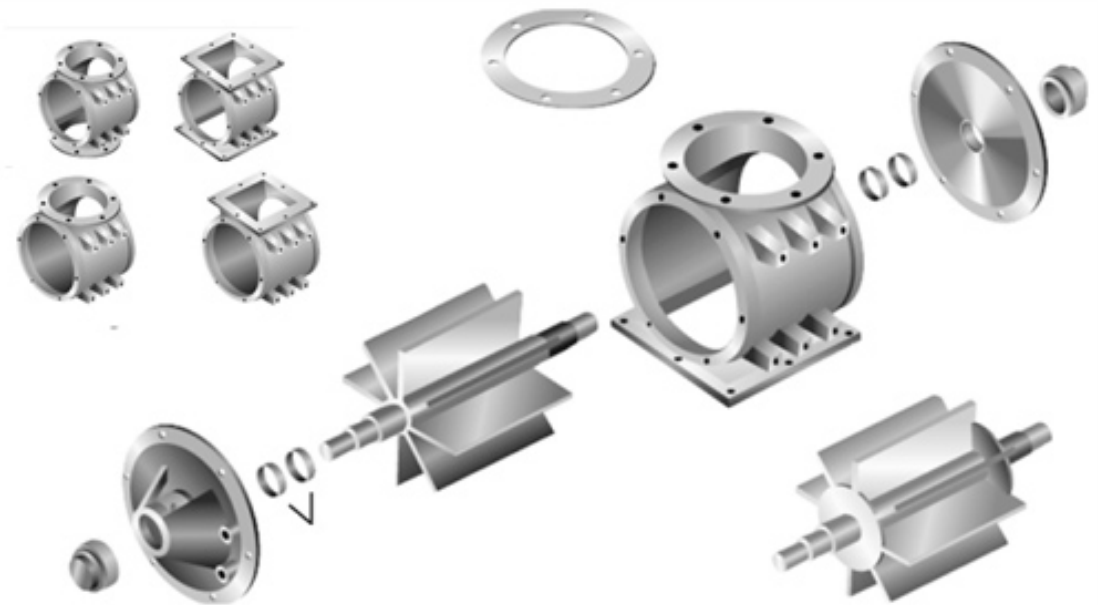
These dust collector valves have been engineered and designed solely as a low cost alternative for applications with pressure differentials of 3 psi or less.

## PRODUCT RANGE

Available in 150, 200, 250 and 300 mm round and square inlet sizes.

## SALIENT FEATURES

- **Body:** Cast Iron Precision Bored
- **End Covers:** Cast Iron Precision Machined and Spigot Located into Valve Body
- **Rotor:** Fabricated Mild Steel Closed (Shrouded) Type Fully Machined
- **Bearings:** Ball Type Rigid Inboard Sealed for Life
- **Seal:** Shaft Seal Rubber Lip Type
- **Drive:** Motorized Worm Box Shaft Mounted on Rotor and Fitted with Standard I.E.C. Motor TEFC 3PH/50HZ Flange Mounted to Worm Box
- **Valve Speed:** Sizes 150 & 200 - 22 RPM, Sizes 250 & 300 - 25 RPM
- Consistent excellent performance, durability, efficiency and longer service life.
- Available in C. I. / M. S. Construction
- Rotor with Beveled Tips
- Rotor with Open / Closed Ended Construction
- Special Design for Granular Products
- Blow Through & Quick Cleaning Version Available
- Ambient Temperature – 25 to 100 Deg. C
- Heavy Duty Flanges
- Geared Motor with Fixed Speed
- The rotary air locks supplied by us are complete with standard ABB / reputed make motor, heavy duty gear box, heavy common base frame , tyre coupling, glass viewing arrangement with tie rods and duly painted with anti-stick epoxy coating from inside.



# WET SCRUBBERS

State of art technology acid fume (plate) scrubbers are offered, which are most effective equipments for scrubbing water soluble gaseous pollutants. And our wet scrubbers offer the latest technologies for acid gas control. Our Scrubbers are used for scrubbing hazardous gases like HCl, SO<sub>2</sub>, NH<sub>3</sub>, various noxious acid / alkali fumes etc. Number of installations for VOC (Volatile Organic Compound) control, solvent, and sulphur recovery and odour control have proven the economical, reliable performance of our fume extraction systems employing Scrubbers and services in the wide array of industries we serve.

**Product Range : 400 mm diameter To 4000 mm diameter in single stage.**

## TYPES OF WET SCRUBBERS

- Conventional Packed/Floating bed Scrubbers
- Spray Type Scrubbers.
- Impingement Plate Type Scrubbers.

## Principle of Operation

In this device, the foul gas is brought in contact with water so as to dissolve the contaminant and thus the gas stream is cleaned. The gases containing the fumes enter the scrubber from the bottom. It starts going up through the media chamber, due to the suction effect created by a blower.

The scrubbing liquid, generally water, flows down from the top, in the opposite direction. The water flowing down and the gases going up are thoroughly mixed in the packed bed section / media chamber, which generally contains raschig rings of suitable material that are randomly distributed. These rings help in complete mixing of gases and the water by creating a larger surface area of contact and thus, more residence time. The quantity of packing material depends on the concentration of the gases. The scrubbing medium can be any fluid that will help in neutralizing the fumes. The cleaned gases escape from the top while the scrubbing fluid falls to bottom tank, re-circulated for scrubbing.

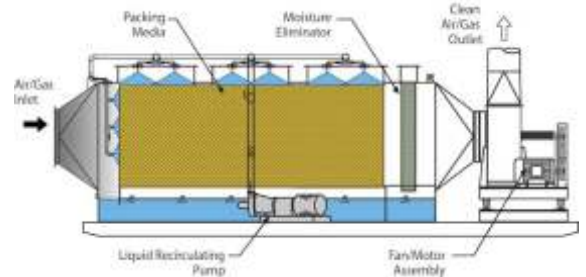
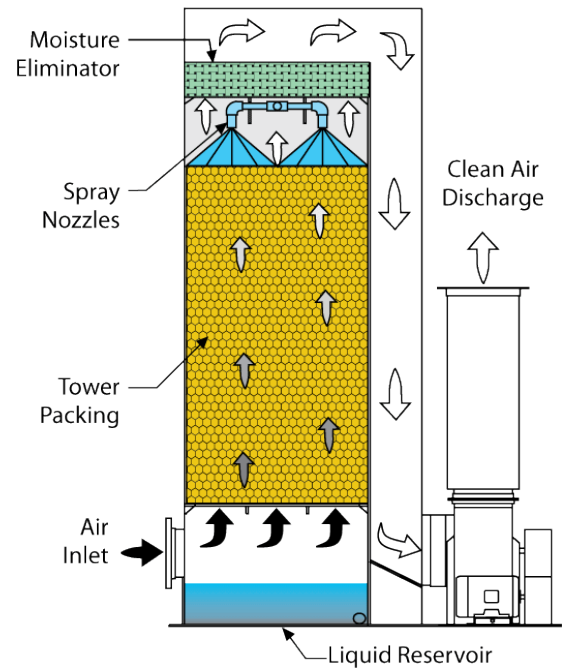
**Get the VENTECH advantage:**

## SALIENT FEATURES

- Wide range of Scrubber design to cater to different types of particulate & gaseous pollutants.
- The material of construction for the above types of scrubbers could be either Metallic in Mild Steel, Stainless Steel or all Synthetic (PP/PVC + FRP/FRV).
- Compact and customised design.
- Simple & Reliable Operation.
- High Scrubbing efficiency
- Suitable for high or low concentration of pollutant.
- All static construction, so easily maintainable.
- Scrubbers are offered in Vertical as well as Horizontal Versions to suit site conditions.

## BENEFITS

- Increased productivity and safety.
- Environment friendly.
- Turn-key execution of system for extraction of corrosive fumes and gases.
- Ensures hygienic working atmosphere.
- Committed to a cleaner environment.
- High separation efficiencies of 1 micron particulate and gaseous emissions.
- Customized process equipment for metal finishing industries.
- Expertise to integrate the systems with upstream as well as downstream processes.



# APPLICATION MATRIX

## BAG FILTERS

| INDUSTRY   | APPLICATION   |                           |   |
|--|---|---------------------------|---|
| Steel  | Furnace-Process,Material Handling,Cast House,Stock House/Boiler,Kiln / Reactor Exhaust,Coal Preparation,Injection/Coke Oven |                           |   |
| Cement   | Clinker Cooler/Coal Mill/Cement Mill/Kiln/Reactor Exhaust/Transfer Point-Dedusting/Alkali Bypass/Material Handling          |                           |   |
| Power / Agro Based/Sugar/rice tobacco/Breweries & Distilleries Solvent Extraction/Edible Oil textiles/Soaps Detergents & Waxes/Paints & Dyes | Boilers/Material Handling   |                           |   |
| Dairy  | Boilers/Dryers  | Sponge Iron               | Kiln/Reactor Exhaust/Material Handling  |
| Drugs & Pharmaceuticals  | Boilers/Dryers/Material Handling  | Non Ferrous Metallurgical | Ovens Smelter/Furnace/Material Handling |
| Food Processing  | Boilers/Dryers  | Tyres                     | Boilers/Banburry Mixers                 |
| Paper & Pulp   | Boilers-Process/Recovery/Mill/Material Handling   | Wood                      | Dryers,Boilers and Material Handling    |

## CYCLONE SEPARATORS

|                               |  |                                      |   |
|-------------------------------|--|--------------------------------------|---|
| Boilers                       | Coal, husk, bagasse and other solid fuel fired   | Wood-products                        | Saw dust and wood ash   |
| Sugar Industry                | Sugar dust and bagasse   | Fertiliser Industry                  | Dedustiang,dryer and cooler   |
| Cement Industry               | Pre-collector for cement mill pneumatically conveyed cement dust for ship loading & unloading etc. |                                      |   |
| Metal Fines                   | Aluminium dust,copper chips induction furnace,exhaust and other metal dust                         |                                      |   |
| Abrasive and Sand Application | Fluid bed dryer,foundry sand and sand blasting system  | Fabric,Lint Paper & Fibrous Material | Synthetic fibre,fibreglass,cotton/wool polyester/nylon,paper fluff. |
| Plastic Resins and Chemicals  | PVC, foam rubber etc.  | Agro Based/flour Rice/pulses         | Dust Aspiration   |
| Automobile & Its Ancillaries  | Buffing and Polishing  |                                      |   |

## SCRUBBERS & WET COLLECTORS

|                          |                            |                               |  |                            |
|--------------------------|----------------------------|-------------------------------|--|----------------------------|
| Metal Treatment Industry | Hot-dip Galvanizing Plants | Process Industry              | Pipe pickling/Stainless Steel Pickling/Wire Pickling |                            |
| Metal Finishing Industry | Electroplating/Anodizing   | Auto and Auto Ancillary Units | Cement Industry                                      | Food Processing Industries |
| Canteens & Restaurants   | Oil Refineries             | Chemical Industries           | Paint Shops  | Pharmaceutical Industries  |

## VENTECH SYSTEMS PVT. LTD.

( AN ISO 9001 : 2008 Company)  
(A recipient of Bhartiya Udyog Ratna Award )

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