

TNBi
INDUSTRIES



www.tnbiindustries.com

About Us

- Established in 2012
- Engaged in Different technology product with out of the box thinking.
- Know how about different process application.
- Hand on experience on air pollution control and powder handling.

We are manufacturer of high-quality Scrubber, Classifier, Bag Filter and Cyclone for a wide variety of industrial applications. With tailor made solutions and innovative ideas, we completely adapt to the wishes of our customer & our motto always are Quality, safe environment, provide correct solution. Our installations are spread across the industrial spectrum from customers in Chemical, Food, Pharmaceutical, Cement, Minerals, Power generation, Metal Powder, Infrastructure, Foundries etc., both in India as well as overseas.

Intellectual Capabilities

- Two patents applied one for scrubber and another for classifier.
- Patented venturi scrubber with involute breaker for better performance.
- Patented classifier to separate different sized particles from powder stream without rotating parts.



Venturi Scrubber

It works on Impaction-Interception-Diffusion principle for particle collection. Gas stream comes in contact with Liquid stream and the pollutants gets transferred to Liquid stream, clean gas leaves scrubber.



Packed Bed Scrubber

Packed Bed Scrubber works on following two principle

- Absorption: When the gas gets absorbed in scrubbing Liquid. E.g. Ammonia, HF etc.
- Reaction: When the gas reacts with Scrubbing Liquid e.g. SO₂, H₂S, etc...

Multi Stage Scrubber

In many cases, several technologies must be integrated together to provide adequate removal and treatment efficiencies. TNBi's experience includes the engineering and fabrication of customized Multi-Stage Scrubbers utilizing the following combination of equipment:

- Quench, Venturi Scrubber and/or Packed Tower
- Venturi Scrubber and Multi-Stage Packed Tower.
- Quench and Venturi Scrubber
- Quench and Packed Tower
- Venturi and Packed Tower



Scrubber Design Capabilities

- Multiple Gaseous Pollutants can be treated in single device.
- Capacity designed up to 500,000 m³/hr
- Can be Designed at severe condition (Temperature 1100 Deg C, Pressure: 1 Bar)
- Safest way to control Combustible / Explosive Dust
- Different MOC Can be used based on Gas and Liquid Properties
- Less Power consumption
- Much Efficient over other Pollution control Equipment
- Compact Design compared to Dry Collection.
- Can handle Abrasive, Corrosive, Combustible dusts
- Different gases treated like HCl, H₂S, HF, NH₃, SO₂, NO_x, Some odours and some organics

Classifier

TNBi offers a comprehensive range of classification solutions to meet particle sizing requirement.

Material enters in classifier with high velocity, to separate particles at cut point 2 to 300 microns. TNBi Classifier consists with secondary air arrangement to separate particle to customer requirement.

Working Principle

- Gas along with Powder enters in classifier.
- Smaller particles get separated due to centrifugal force.
- The fine-tuning in particles separation is done using secondary air.
- Coarse particles get collected at bottom of classifier
- Fine separated particles leave classifier and can be collected in Cyclone and/or bag filter.

TNBi Classifier Advantages

- High Reliability – Constant product output
- No moving parts, No wear & tear
- Low operating cost
- Low Installation Cost
- Can be installed in Series
- Low maintenance cost
- Easy adjustment for separation efficiency / Particle sizes
- Spare parts not required
- Can handle combustible dust
- Low choking issues
- Can be installed in process line.



Bag Filter

Bag Filter (also known as bag house, pulse jet filter) is an air pollution control device that removes dust particle from the gas through the filter media.

Dust laden gases enters in the Bag Filter through the ducting and passes by fabric filter or filter bags. Here dust trap by filters and clean air or gas vent in the atmosphere.

Working Principle

- The Bag Filter mainly divided in two section i.e. clean air chamber and dirty chamber.
- The dust laden gases enter in the Bag Filter that area is known by dirty chamber.
- In dirty chamber dust trap by filter media and clean air or gas passes through filter media in the atmosphere.
- Due to continuous process collected dust on filter media is clean by pulse jet air.
- Cleaned dust discharge by rotary air lock or knife gate valve from the dirty chamber.

Design Capabilities

- Capacity designed up to 500000 m³/hr
- Temperature up to 260 deg C
- Pressure from full vacuum to 33 bar.
- Guaranteed Performance.
- ATEX Compliance can be offered.



Cyclone

A cyclone separator is process of removing particulates from an air / gas stream through vortex separation. Rotational effects and Centrifugal force are used to separate solids from gas.

Working Principle

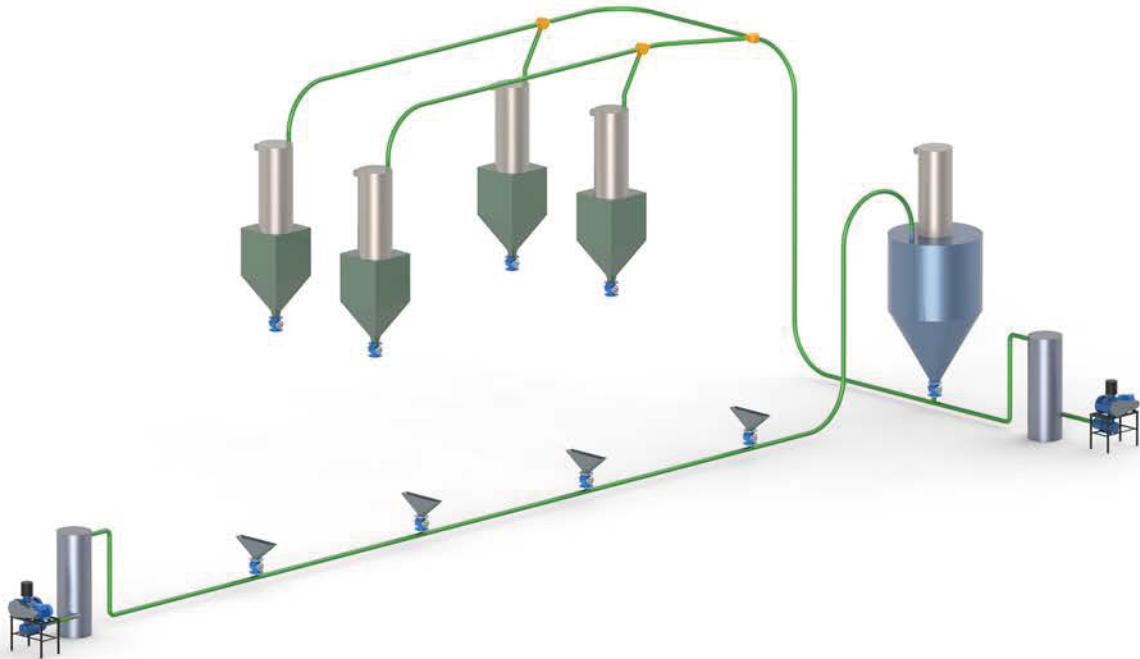
- Air flows enter in tangential inlet from the top and ending at bottom end before exiting the cyclone in a straight stream through the centre of the cyclone and out the top.
- Particle in the rotating stream have too much inertia to follow the tight curve of the stream and strike the wall and then particles falling down at discharge end.
- In conical system, as the rotating flow moves towards the narrow end of the cyclone the rotational radius of the stream is reduced, then separating smaller and small particle.

Design Capabilities

- Capacity designed up to 500000 m³/hr
- Temperature up to 1100 deg C can be handled.
- Pressure from full vacuum to 33 bar
- Emission can be guaranteed less than 50 mg/Nm³
- Guaranteed performance.
- ATEX Compliance can be offered



Pneumatic Conveying System



1. Lean Phase Vacuum Conveying

- Capacity: Up to 10 TPH
- Conveying Distance: Up to 100 meters
- Density of material: 150-2000 Kg/m³
- Vacuum: Up to (-) 0.5 Bar
- Material handled: Chips, Fine Powder, Ash, Other low-density material, etc.

2. Lean Phase Pressure Conveying

- Capacity: Up to 35 TPH
- Conveying Distance: up to 200 meters
- Density of material: 150-2500 Kg/m³
- Pressure: Up to 1 Bar
- Material handled: Powders, Sugar, Abrasive Material, Bulker Unloading, etc

3. Dense Phase Conveying

- Capacity: Up to 300 TPH
- Conveying Distance: Up to 450 meters
- Density of material: 150-3500 Kg/m³
- Pressure: Up to 5 Bar
- Material handled: Highly Abrasive materials, Fly Ash, etc.

TNBI Pneumatic Conveying System Advantages

- High Reliability
- Precise conveying
- Dust Free operation
- Optimize Power consumption
- Hygienic operation
- User Friendly
- Completely Automatic System
- Less man power required
- Optimize space requirement
- Handle many different solids (Abrasive, Corrosive, Combustible, etc)
- Closed Loop Inert Gas Conveying available
- Multiple feed and discharge point can be given

Accessories

1. Centrifugal Blower

- Capacity: 500 m³/hr to 200000 m³/hr
- Static Pressure: 100 mm wg to 1200 mm wg
- MOC: MS, SS304, SS316, FRP & also in special material on request
- Drive Arrangement: Direct Drive / Belt Drive



2. Rotary Airlock Valve

- Type: Drop Through / Blow Through
- MOC: CI/MS, SS 304, SS 316 (Abrasion Resistance Lining, hard facing, Chrome Plating, Mirror Finish etc available)
- Sizes Available: 100 mm to 600 mm
- Temperature Range: Up to 700 deg C
- Drive Arrangement: Direct Drive / Chain Drive



3. Screw Conveyor

- Type: U-type / O-Type
- MOC: MS, SS 304, SS 316 (Abrasion Resistance Lining, hard facing, Chrome Plating, Mirror Finish etc available)
- Sizes Available: 100 mm to 600 mm
- Temperature Range: Up to 700 deg C
- Drive Arrangement: Direct Drive



Industries Served

- Food & Pharmaceutical
- Chemicals
- Paint & Pigment
- Steel
- Cement
- Metal and minerals.
- Power
- Metal Powder
- Breweries and Distilleries
- Paper and pulp
- Solvent Extraction
- Textiles
- Soaps, Detergents & Waxes
- Non-Ferrous Metallurgy
- Milling applications
- Tyres
- Wood Processing

TNBI Industries Pvt. Ltd.

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Spares Available



Cartridge Filter



Filter Bags



Cages



Pulse Valve



Timer