



TRIVENI BOILER



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# Triveni Boiler Pvt. Ltd.

Pollution Control Division

# *Electrostatic Precipitator (ESP)*

AEE's ESP's are designed for high efficiency to maintain emission levels below 50 mg / nm<sup>3</sup>. Rigid pipe and spike discharge electrodes are made from deep drawn CRCA tubes, ensuring longer life by preventing breakage/ snapping. They ensure minimum arcking and allow considerable. Elevated voltage resulting in higher efficiency of ESP. Collecting plates made from CRCA sheets of 1.2 or 1.6 mm thickness have structural rigidity to maintain consistent electrode spacing which is very essential for performance of ESPs at high efficiency. Casing hoppers etc, are designed and manufactured and are fully leak proof thus containing the ingress of false air. This eliminates the corrosion of components long term performance of ESP. Microprocessor based TR sets, control panels ensure maximum power input into ESP to maintain high efficiency of ESP in all operating conditions.

Expensive compared to all other systems Do not respond well to process changes such as changes in gas temperature, gas pressure, gas flow rate, gaseous or chemical composition, dust loading, particulate size distribution, or electrical conductivity of the dust Have a risk of explosion when gas stream contains combustibles Product ozone during gas ionization Require large space for high efficiency, and even larger space for dust with low or high resistivity characteristics Require special precautions to protect personnel from exposure to high voltage Require highly skilled maintenance personnel Service support difficult in remote areas PCB support forces installation regardless of industry capacity to maintain and operate

## *Three Field E.S.P*



## *Two Field E.S.P*



# Bag Filters

Expensive compared to cyclones and scrubbers IT Can achieve up to 100 mg/Nm<sup>3</sup> provided Have low air-to cloth ratio (1.0 to 1.2 ft/min) May not be used readily in high temperature unless special fabrics are used PCB support forces installation regardless of industry capacity to maintain and operate

## Pulse Jet Bag Filters

AEE Pulse Jet Bag Filter are designed for long bag life with lower pressure drops and easy maintenance. Pulse Jet Bag Filter components like cages, venturies and tube sheet are well designed enabling easy installation and maintenance and to ensure 100% gas tightness across tube sheet preventing dirty gases ingress into clean air side. AEE designed pulse jet cleaning system ensures lower pressure drop, low consumption of compressed air and longer bag life Microprocessor based timer panels ensure proper cleaning cycles and facilitate resetting of cleaning cycles depending on the requirements during operation over a period of time. The Pulse jet bag filters are designed and suppliers with optimum air to cloth ratio depending on the process requirements and AEE has a long experience in all the ranges of bag filters covering has volumes from 1000 m<sup>3</sup> / hr to 5,00,000 m<sup>3</sup> / hr and temperatures ranging from ambient to 280°C. Bag filter designed and manufactured by AEE have their application in Cement kiln gases. Coal and Cement grinding mills, thermo pack, Boilers, Incinerators etc., in Cement, Power, Steel and other process industries

## Reverse Air Bag House (RABH)

RABH is specifically designed to handle high temperature gases in large volumes in process industries. The bag house can ensure emission levels of 20 to 50 mg / nm<sup>3</sup>. RABH is constructed in modules to facilitate offline cleaning. PLC control panel is provided to operate the cleaning cycle and to maintain optimum pressure drop across the bag house and also to ensure long bag life. The filter bags are suspended from the top with the help of 'J' hook assembly and springs for proper tensioning. The bags are fixed at the bottom with quick release clamps thus facilitating easy installation and maintenance. 100% gas tightness is ensured in construction of casing, hopper and tube sheet to prevent ingress of dirty gases to clean air compartment. The balanced gas distribution concept employed in the design of inlet and outlet plenums facilitates equal distribution of gases to all modules.



# Wet Scrubber

This unit is particularly useful for scrubbing fine submicronic particulate matter. It includes Wet-dry junctions and a variable throat operation can be manual or automatic as required. The unit can handle recycle streams of thick and viscous slurries containing up to 15% solids.

In operation, liquor is introduced via a multiple distributor pipe system. These special pipes are arranged to provide complete coverage of the throat and washing of the walls by the liquor. The dirty gas and liquor converge at the throat entrance where extreme agitation and turbulence atomizes the liquor and mixes it intimately with the gas. The dust/fume particles are captured by direct impingement and the droplets are further removed in the mist eliminator section. High efficient ventury scrubbers can be constructed from carbon steel, stainless steel, speciality alloys or plastics. Units are available with capacities ranging from 600-200,000 CFM (17-5664 m<sup>3</sup>/min).

## Advantage of our Scrubber

### WET SCRUBBER SYSTEM ADVANTAGE

- Small space requirements: Scrubbers reduce the temperature and volume of the unsaturated exhaust stream. Therefore, vessel sizes, including fans and ducts downstream, are smaller than those of other control devices. Smaller sizes result in
- lower capital costs and more flexibility in site location of the scrubber.
- No secondary dust sources: Once particulate matter is collected, it cannot escape from hoppers or during transport.
- Handles high-temperature, high-humidity gas streams: No temperature limits or condensation problems can occur as in bag houses or ESP.
- Minimal fire and explosion hazards: Various dry dusts are flammable. Using water eliminates the possibility of explosions.
- Ability to collect both gases and particulate matter. • Use of Waste Water for Circulation. • Optimizing Boiler Operation. Fuel Consumption Reduction. • Reducing Air Ingress. • Increasing Filtration Efficiency. • Best Operation Practices. Reduction in SOX. Below Permissible Limit. • Reduction in SPM Limit as per PCB Norms. Easy Operation by Unskilled Man Power. • Consistent Repetitive Performance.

### Single Tower



### Double Tower



## Teema Cyclone

Dry collection system Inefficient on norms: max 300-400 mg/Nm<sup>3</sup> Have low collection efficiency for respirable particulates Suffer decreased efficiency if gas viscosity or gas density increases Are susceptible to erosion Have drastically reduced efficiency due to reduction in airflow rate. Cannot process sticky dust



## Mechanical Separators

Dry collection system Inefficient on norms: max 200-300 mg/Nm<sup>3</sup> Have low collection efficiency for respirable particulates Are prone to plugging due to smaller diameter tubes Improper gas distribution may result in dirty gas bypassing several tubes. Cannot process sticky dust For a given gas volume, occupy more space than single cyclone separators Normally have higher pressure drop than single



## Multicone Cyclone

We are engaged in manufacturing performance oriented range of Multicone cyclone separators which are highly appreciated among our valued clients. In the cyclone separator the dusty air is introduced at the top of the separator through the pipe. Thus, the peripheral vortex is formed from downward gases which give rise to the centrifugal force. This force throws the dust particles on the wall and then move downwards towards the hopper. Then cyclone separator is removed through the draw off pipe which facilitate in lowering the industrial pollution.



## Chimney

- M.S. Self Supported Chimney
- M.S. Guy Rope Supported Chimney
- Chimney Height : As Required
- Mfg. as per IS 6533 Part -1 and Part -2
- As Per Good Engineering Practice



# *Manufacturing Setup at Panoli -Ankleshwar*



## **Triveni Boiler Pvt. Ltd.**

**MFG. of: Steam Boiler, Pressure Parts, Boiler Auxiliary and Pollution Control Equipment**

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