



Ganesh

Engineering Works (I) Pvt. Ltd.

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NSIC
CERTIFIED CO.



SMERA RATINGS LIMITED



Decide with Confidence

Environmental Pollution Control Equipment

TURNKEY PROJECTS FOR ETP / STP / WTP

Air Pollution Control Equipment

- ✦ Electro-Static Precipitator
- ✦ Bag Filter
- ✦ Wet Scrubber
- ✦ Mechanical Dust Collector
- ✦ Cyclone Separator
- ✦ Teema Cyclone



Air Pollution Control Equipment

Air contains a diverse mix of microscopic particles, among which there are atmospheric aerosols. Aerosols may originate both from natural sources, as well as from different industrial processes, or electric energy generation. They are usually harmful to the atmosphere and produce similar effects to those of greenhouse gases.

Requirements concerning emission controls are increasingly strict and have great influence in the designing of treatment systems for dust or aerosol emissions that help protect the health and the environment.

De-dusting or elimination of dust and/or aerosols is carried out by either wet or dry surface systems. Envi-tech supplies the most appropriate technologies to be used based on the characteristics of the type of particle to be abated: amount, grain size, humidity percentage, etc.

The most common technologies are:

Wet systems:

- Scrubbers or perforated
- plate scrubbers
- Venturi scrubber

Scrubbers with special filling Dry systems:

- Cyclons
- Bag filters
- Automatic self-cleaning hose filters
- Absolute filters

Water Pollution Control Equipment

- ✦ Lamella Clarifier
- ✦ Clarifier
- ✦ Multi Effect Evaporator
- ✦ Incinerator
- ✦ Agitator
- ✦ Pulse Plate Separator
- ✦ Sludge Thickener
- ✦ Pressure Sand Filter
- ✦ Settling Tank

Water Pollution Control Equipment

We offers efficient solutions to treat wastewater generated in industrial production processes, such as process and washing water, brines, oily waters, etc.

In addition, we have vast experience in ultra-pure water (purification) or raw water production. We apply the necessary treatment to the water collected from the natural environment to ensure the best quality before its use in any industrial process.

Electro-Static Precipitator



Electro-Static Precipitator

Electrostatic precipitators with their countless areas of application remain the most economical system for the removal of dust from industrial gases. Operating costs are reduced due to low energy consumption, and the cost of maintenance and spare parts is very low. In addition, the life expectancy of an electrostatic precipitator usually exceeds that of the upstream production units, such as kilns, mills, driers and coolers.

Electrostatic precipitators are capable of reducing dust content of more than 1,000 g/m³ to any required residual dust content. More than 6,000 units installed worldwide since 2008 are proof of their efficiency and durability. The continuous and further development of all precipitator components using the most advanced technologies and the analysis and evaluation of measured results under various operating conditions have provided an immense pool of experience. When choosing on an installation, customers benefit from unrivalled know-how.

The Typical Applications for Electrostatic Precipitators are:

- Production plants for cement, limestone and gypsum (kilns, mills, driers and coolers)
- Coal- and biomass-fired steam boilers
- Refuse and sludge incinerators
- Iron and steel production (ore processing, blastfurnaces, converters)
- Production plants in the non-ferrous metal industry
- Production plants in the pulp and paper industry

BAG FILTER



Bag Filter

A baghouse (BH, B/H), bag filter (BF) or fabric filter (FF) is an air pollution control device that removes particulates out of air or gas released from commercial processes or combustion for electricity generation. Power plants, steel mills, pharmaceutical producers, food manufacturers, chemical producers and other industrial companies often use baghouses to control emission of air pollutants.

Operation of Baghouses :

Most Bag Houses use long, cylindrical bags (or tubes) made of woven or felted fabric as a filter medium. (For applications where there is relatively low dust loading and gas temperatures are 250 °F or less, pleated, nonwoven cartridges are sometimes used as filtering media instead of bags.) Dust-laden gas or air enters the baghouse through hoppers (large funnel-shaped containers used for storing and dispensing particulate) and is directed into the baghouse compartment. The gas is drawn through the bags, either on the inside or the outside depending on cleaning method, and a layer of dust accumulates on the filter media surface until air can no longer move through it. When sufficient pressure drop (delta P) occurs, the cleaning process begins. Cleaning can take place while the baghouse is online (filtering) or is offline (in isolation). When the compartment is clean, normal filtering resumes.

Bag Houses are very efficient particulate collectors because of the dust cake formed on the surface of the bags. The fabric provides a surface on which dust collects through the following four mechanisms:

Inertial collection - Dust particles strike the fibers placed perpendicular to the gas-flow direction instead of changing direction with the gas stream.

Interception - Particles that do not cross the fluid streamlines come in contact with fibers because of the fiber size.

Types of Bag Filter

- Mechanical Shaker Bag House
- Reverse Air (R/A) Bag House
- Pulse Jet Bag House

Wet Scrubbers



Wet Scrubbers

Introduction to technology Gas scrubbing is the technology by which cleans a gaseous emission of the contaminants it contains. Typically, the air pollutant molecules are separated from the gaseous stream upon contact with a liquid, which may be water, a chemical reagent or a combination of these. The gaseous flow, once washed, is free of contaminants and can be emitted into the atmosphere. Contact of the contaminant with the liquid depends on the type of washer, which may be by wet packing, bubbling or aerosol, for example.

Generally, gas scrubbing is used to remove air pollutants such as smells, vapors and toxic gases. Therefore, in most cases, the pollutants present in the gases are susceptible to being oxidized or absorbed in an acid or alkaline medium. Thus, species derived from nitrogen can be absorbed in an acid environment, while species derived from sulfur are sensitive to absorption in an alkaline or oxidizing medium. In some cases, the contaminants are very soluble in water, so no chemical reagent is needed.

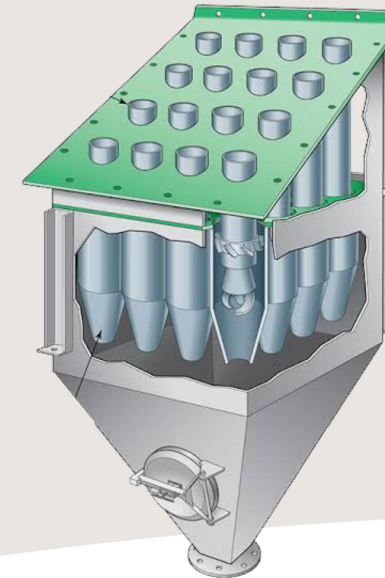
We Offer a wide range of possibilities, with the most common scrubbers being the following types of gas scrubbers

Perforated plate columns Traditional and special filling columns in co-current or countercurrent Spray wash columns Whatever the type of column that best suits the particular conditions of each customer to ensure the success of the scrubbing system, the extensive experience of the technical team has demonstrated that a particularly critical parameter is the effective design of the contaminated air collection systems, so that the entire gas stream to be treated is efficiently conducted to the gas scrubber. The efficiency of the collection and conduction system is equal in importance to the degradation efficiency of the wash column contaminants.

Types of Wet Scrubbers

- Cyclone Spray
- Spray Towers
- Venturi Scrubbers
- Packed Bed Scrubbers

Mechanical Dust Collector



Mechanical Dust Collector

The Industrial Cartridge Style Dust Collector is designed to provide continuous-duty collection and removal of airborne dust and particulate matter produced by manufacturing and processing operations at 99+% efficiency on many installations. Through the use of a Monroe Cartridge Style Dust Collector, these operations can discharge clean, filtered air back into the work area reducing climate control costs.

The Monroe Cartridge Style Dust Collector modular design incorporates high efficiency, pleated cartridge filters to achieve maximum filter surface area in a relatively small housing. The cartridges are designed to provide a low static pressure drop.

Cartridge cleaning is accomplished by reverse compressed air pulses through a few cartridges at a time, allowing continuous operation without shut-down. These reverse pulses, with a velocity of twice the speed of sound, break away caked dust from the cartridge so that it can drop the collector bottom.

Cyclone Separator



Cyclone Separator

Cyclone dust removal is a preliminary filtration device for air purification system. The cyclone series of Kaisen has rational design, simple structure and adopts axial access type. Treatment of air flow is 3 times that of common cyclone dust removal, and air stream is distributed evenly.

It is easy to install and maintain. The equipment investment and operating costs are low. It is suitable to be preliminary filtration treatment for air purification systems to protect and elongate the life span of filter cartridge in air purification system.

The mesh in the fume inlet is stainless steel mesh sintered with PTFE membrane, which is conducive to capturing and settlement of large particles and sparks. The mesh is a patented product of our company.

It intercepts big flying particles moving with fast-flowing air stream, and make them fall into the dust collector directly, filter out big particles and flammable substances in the first place, thus greatly elongate filter cartridge's life span.

Teema Cyclone



Teema Cyclone

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Lamella Clarifier



Lamella Clarifier / Plate Separator

The Vertical Clarifier is designed to remove solids from wastewater and other process liquids. The Flash Mix and Flocculation Tanks (optional) allow for the addition of chemicals and polymers that will aid the settling process — adjusting pH to precipitate dissolved solids and/or enhancing the agglomeration of suspended particles into heavier, more settle-able floc. The liquid is fed from these tanks into the clarifier through the inlet chamber, which directs flow into the separation section.

The liquid then enters the lower area of the laminar plates through side slots which distribute it across the entire width of the plates. Particulate settles onto the face of the plates and slides down to the clarifier bottom. The clarified liquid exits the plate sections through weirs at the top of the unit which are designed to develop and control adequate pressure drop, maintaining laminar flow through the plates. The clarified liquid then flows into the effluent chamber and out of the clarifier.

Settled solids collect at the bottom of the pyramid sludge hopper and are removed from the clarifier. A Sludge Thickener (optional) with rake mechanism may be utilized in place of the pyramid hopper when applicable.

The unique, modular design of the Monroe Parallel Plate Vertical Clarifier allows for easy removal of individual laminar plate modules from the clarifier for inspection.

Clarifier



Clarifier

Sufficient tank size and low energy inlet geometry allows sludge to settle and floating solids and oils to rise to the surface.

If a standard center inlet design will not provide full flocculation of the suspended solids, an energy-dissipating inlet (EDI) will be utilized. This type of inlet distributes the flow into the flocculation zone and imparts a tangential stirring action that decreases settling time.

Monroe is able to furnish a variety of EDI designs depending on customer requirements and influent characteristics.

Mechanical flocculation and treatment with chemical coagulants are available, depending on the application. An enlarged feedwell for enhanced flocculation can be designed to provide increased residence time that aids floc formation and improves settling.

Multi Effect Evaporator



Multi Effect Evaporator

We are leading manufacturer, Importers and Service Provider of Multiple Effect Evaporator System and our product is made up of good quality.

Multiple Effect Evaporator System Led by the team of efficient professionals, we are able to offer Multiple Effect Evaporator System to our clients.

These plants are made using high-quality raw component in tandem with international quality standards.

Owing to their easy installation, rugged construction and longer functional life, our evaporator plants are highly demanded in the market.

Multiple Effect Evaporator System are extensively catering to the needs of textile, pharmaceutical, automobile, chemical, and dyeing industries.

KEY FEATURES:

- Simple operation
- Flexible operation
- Can be customized
- Saving production cost
- Less energy consumption

Incinerator



Incinerator

Incinerator or burning of non-recyclable solid waste helps to reduce the volume and the health risks related to the waste fraction to dispose. Incineration plants reduce volume (up to 90%) and weight (up to 75%) and break down hazardous substances such as pathogens and toxic chemicals. Flue gases must be treated in a complex treatment system after the combustion to avoid toxic emissions and the residual ashes have to be disposed of safely preventing leachate infiltration in order to protect human health and the environment. Large-scale incineration plants have a capacity up to 3000 tons per day and are high-tech and rather expensive. Incinerators for municipal solid waste is adapted where land for sanitary landfills is scarce, and financial and highly trained labourers are available. Moreover, heat, energy and precious metals may be recovered from the ashes and reuse. There are three main types of large-scale incinerators: mass-burn incinerators, fluidised-bed incinerators and modular incinerators

Pressure Sand Filter



Pressure Sand Filter

Pressure Sand Filter is used for removal of suspended solids & turbidity from Water & Wastewater. We offer series of filters of different sizes at a low cost, reliable and efficient way to filter your water. It consists of layers of sand and pebbles. Our unique design of Pressure Sand filter ensures the maximum utilization of the surface area, lesser pressure drop across the filter bed and effective removal of the impurities like TSS and Turbidity below 5 PPM and 5 NTU respectively.

WATER POLLUTION CONTROL EQUIPMENT

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Settling Tank



Settling Tank

traditional thickeners & clarifiers have been developed for non-stop 24x7 operations in chemical, industrial mineral and ore processing applications. Two basic configurations of the units are available - bridge mounted or centre pier mounted. They include rake and drive mechanisms and feed systems suitable for tanks with diameters in the range of 5 m to 75 m. They provide up to 2000000 Nm drive head torques.

thickeners and clarifiers have an optimized design that simplifies maintenance. In-line, high-performance epicyclic gearbox and main motor are included within the in-drive system. The enhanced torque tower and telescopic pier make it easier to examine torque keys.

These are ideal for copper tailings and concentrates, fine coal tailings, thickening and storage of Kaoline, magnetite fines, gold/silver tailings and concentrates, phosphate slimes, slurry from FGD plant, iron ore tailings, and lead and zinc concentrates and tailings.

WATER POLLUTION CONTROL EQUIPMENT

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Sludge Thickener



Sludge Thickener

Circular Thickeners provide a crucial treatment step between upstream process screens, clarifiers, and separators and downstream dewatering and sludge conditioning processes. A well-designed thickener provides storage and equalization, reduces the volume of sludge streams, and increases their solids concentrations. This allows for more economically designed dewatering and sludge conditioning systems, reducing capital and maintenance costs.

Thickeners are similar to other clarifiers in appearance and operation, however, they are located at a different stage in the overall water/wastewater treatment process and are used to achieve different objectives.

Thickeners receive the waste streams from screens, clarifiers, separators, and other water treatment processes and further concentrate the sludge. Typical incoming solids concentrations are between 0–3% solids. Thickened solids concentrations are typically between 3–6%, however higher concentrations can be achieved depending on process conditions.

Circular Thickeners are commonly found at municipal water and wastewater treatment plants, steel mills, refineries, chemical plants, power plants, and most manufacturing plants with wastewater treatment equipment.



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