سامان آریا پترولیوم

SAMAN ARIA PETROLEUM

DESIGNING

ENGINEERING

FABRICATION

SOLVING THE UNSOLVABLE

FIX EQIUPMENTS

PROCESS PACKAGES

INTERNALS & ELEMENTS

SAMAN ARIA
PETROLEUM ENG. Co.

ABOUT US

WHO WE ARE?

SAMAN ARIA PETROLEUM is a privately owned independent, engineering and manufacturing company with their own fabrication facilities, operating in the fields of FILTRATION & SEPARATION equipment design, procurement and fabrication.

SAMAN ARIA PETROLEUM was founded in 2007 and has since achieved excellence in the field of specialized and custom-made filters for industrial purposes.

Today SAMAN ARIA PETROLEUM combines outstanding know-how in filtration and separation technologies with in depth experience in engineering, providing equipment, technology and services for the Oil & Gas, Power Generation and Chemical industries, and excels in all fields where filtration and separation require high technical competence and product quality.

We design and fabricate both internals (including filter cartridges, coalescers, demisting devices, inlet distribution devices) and packages (including pressure vessels and skids).

SAMAN ARIA PETROLEUM owns two separate fabrication shops, one for steel work and pressure vessel fabrication and the other one for cartridge and internal fabrication.

Technical approach to dealing with the projects, customer satisfaction and innovative solutions are the main concerns of the company.

We produce our filter/coalescer cartridges packages in a various of standard dimensions, but can be customized to any dimensions or grades based on client individual project requirements.

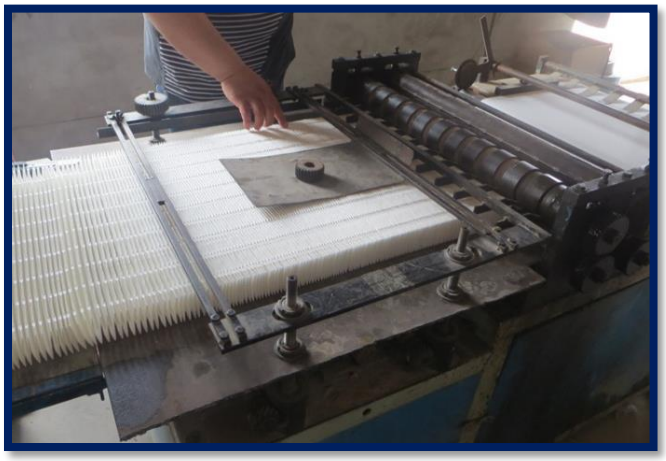
We are proud that most of our clients have returned to us again after first cooperation.

INFRASTRUCTURE

The scale and diversity of our products require strong engineering capabilities. Our engineers and technicians are qualified from reputed universities.

Both of our factories are well-equipped with required machineries such as:

- Heavy and thin plate Rolling Machines
- Bending facilities
- Heavy Handling facilities
- press machines
- Automatic and manual welding machines
- Drilling facilities
- Knife & Rolled Pleating machines
- Automatic adhesive making machine
- Spiral & Linear Hot melting machine



FIXED EQUIPMENT

Fixed equipment in industrial settings refers to the stationary machinery and structures used in various processes. Towers are a type of fixed equipment commonly found in industries such as petrochemical, oil and gas, chemical processing, and power generation. These towers are used for a variety of purposes, including separation, distillation, absorption, and chemical reactions.

The term "fixed equipment" distinguishes these items from "rotating equipment," such as pumps, compressors, and turbines, which have moving parts. Fixed equipment includes vessels, tanks, heat exchangers, reactors, columns, and towers. They are designed to handle specific processes and are typically constructed from materials capable of withstanding high temperatures, pressures, and corrosive substances.

SEPARATOR

A separator in the industrial context is a device or equipment used to separate different components or materials from a mixture. This can include separating solids from liquids, gases from liquids, or even different types of solids from each other.

In various industrial processes, separators are crucial for refining raw materials, purifying liquids, and removing impurities. For example, in the oil and gas industry, separators are used to separate oil, gas, and water from the produced fluid. In the food industry, separators are used to extract fats and oils from liquids. There are different types of industrial separators, such as centrifugal separators, magnetic separators, cyclone separators, and more, each designed for specific separation purposes. These devices play a vital role in ensuring the quality and purity of materials and substances used in industrial production. The design, construction, and maintenance of fixed equipment are crucial to ensure safety, efficiency, and compliance with industry regulations. Regular inspections and maintenance are essential to ensure the integrity and reliability of fixed equipment in industrial facilities.

2PHASE SEPARATOR

A 2-phase separator is used to separate a mixture into two distinct phases, typically a liquid and a gas. This type of separator is commonly used in oil and gas production to separate oil and gas from the produced water. The produced fluid enters the vessel and is allowed to separate into a gas phase and a liquid phase. The gas phase is typically collected at the top of the vessel and is removed, while the liquid phase is collected at the bottom.

3PHASE SEPARATOR

A 3-phase separator, on the other hand, is used to separate a mixture into three distinct phases, typically oil, water, and gas. This is also commonly used in the oil and gas industry to separate oil, water, and gas produced from a well. The produced fluid enters the vessel and is separated into three phases: oil, water, and gas.

FIXED EQUIPMENT

TOWER

The gas phase is collected at the top, the oil phase is collected in the middle, and the water phase is collected at the bottom. Each phase is then removed from the separator and further processed or treated.
Both types of separators are essential in industrial processes to separate and process different components of a mixture for further use or disposal. In the oil and gas industry, 2-phase and 3-phase separators are crucial for the initial separation of oil, gas, and water produced from a well. These separators are typically large cylindrical vessels that use gravity to separate the different phases based on their densities.
These separators are critical for the initial separation of oil, gas, and water, allowing for the efficient processing and treatment of these components before they are transported for further refining or disposal. The design and operation of these separators are carefully engineered to ensure effective separation and to meet regulatory and safety standards.

COOLING TOWER

These towers are used to remove excess heat from industrial processes or HVAC systems by cooling water through evaporation. It works by using water to absorb heat from a process or system and then releasing that heat into the atmosphere through evaporation. The water is circulated through the cooling tower, where it is exposed to ambient air, which causes the water to evaporate and release heat. This process cools the water, which is then recirculated back to the process or system. Cooling towers are commonly used in power plants, oil refineries, chemical plants, and other industrial facilities where large amounts of heat need to be removed from a system to prevent overheating and damage. Cooling towers come in various designs and sizes, but they generally operate on the principle of evaporative cooling. There are two main types of cooling towers:

Wet Cooling Towers: These towers use the evaporation of water to remove heat from a system. Hot water from the industrial process is pumped to the top of the tower and distributed over a fill material, which increases the surface area for the water to come into contact with air. As the water cascades down through the fill material, it is exposed to ambient air, which causes some of the water to evaporate, carrying away the heat in the process. The cooled water is then collected at the bottom of the tower and recirculated back to the industrial process.

FIXED EQUIPMENT

Dry Cooling Towers: In contrast to wet cooling towers, dry cooling towers use air to cool the water without directly evaporating it. These towers rely on the principle of convection to transfer heat from the hot water to the air. The hot water is circulated through finned tubes, and ambient air is blown across the tubes to remove the heat. The cooled water is then recirculated back to the process.

Cooling towers are essential in maintaining the efficiency and reliability of industrial processes by regulating the temperature of equipment and systems. They also help conserve water resources by allowing for the reuse of cooled water in industrial applications.

FLARE PACKAGE

SAMAN ARIA PETROLEUM meets safety in its state-of-the-art flare packages. Our flare packages are designed to provide reliable and efficient solutions for the safe disposal of excess gases in industrial settings. Explore the features that set our flare packages apart in terms of performance, safety, and environmental responsibility.

Some of key features of our design are:

1. Precision Combustion Control: Our flare packages are equipped with advanced control systems that ensure precise combustion of excess gases. This not only enhances safety but also contributes to environmental compliance by minimizing emissions.

2. High-Efficiency Flare Tips: The heart of our flare packages lies in the design of our high-efficiency flare tips. Engineered for optimal combustion, these flare tips promote efficient and clean burning, reducing the environmental impact of gas disposal.

3. Modular Design for Versatility: With a modular design, our flare packages offer versatility in installation and adaptation to various industrial environments. This modular approach facilitates easy integration into existing systems, minimizing downtime during installation.

4. Enhanced Safety Features: Safety is paramount in our flare packages. Incorporating the latest safety technologies, such as flame arrestors and pressure relief systems, our packages provide a secure and controlled environment for gas disposal.

FIXED EQUIPMENT

HEAT EXCHANGER

There are various types of heat exchangers, including shell and tube heat exchangers, plate heat exchangers, finned tube heat exchangers, and more, each with unique designs and applications. The choice of heat exchanger type depends on factors such as the specific heat transfer requirements, fluid properties, space constraints, and operating conditions.
Heat exchangers are essential components in a wide range of systems, including HVAC systems, refrigeration units, chemical processing plants, power plants, and heat recovery systems. They play a critical role in the efficient and effective transfer of thermal energy in numerous industrial and commercial processes.

The primary functions of a heat exchanger include:

Heat Transfer: Heat exchangers facilitate the transfer of thermal energy from a hot fluid to a cooler fluid or vice versa. This allows for heating or cooling of a process stream or the exchange of thermal energy between different fluid streams.

Energy Efficiency: By transferring heat between two fluid streams, heat exchangers help to improve energy efficiency in processes such as heating, ventilation, air conditioning, refrigeration, power generation, and industrial manufacturing.

Thermal Control: Heat exchangers are used to control and maintain the temperature of fluids within a system, ensuring that they remain within the desired operating range.

SHELL & TUBE

A shell and tube heat exchanger is a type of heat exchanger that consists of a cylindrical shell with a bundle of tubes inside. The shell and tube heat exchanger is one of the most common types of heat exchangers used in industrial applications due to its versatility, efficiency, and durability.
The basic design of a shell and tube heat exchanger consists of a shell (the outer cylindrical vessel) and a bundle of tubes (the inner component). The two fluid streams, one hot and one cold, flow through the shell and tube sides, respectively. The hot fluid flows through the tubes, while the cold fluid flows through the shell, surrounding the tubes. The heat is transferred from the hot fluid to the cold fluid through the tube walls.

Shell and tube heat exchangers are commonly used in applications such as power generation, chemical processing, oil and gas refining, and HVAC systems. They are available in various sizes and configurations to meet different heat transfer requirements and can be customized to suit specific applications.

The advantages of shell and tube heat exchangers include:
High Efficiency: Shell and tube heat exchangers can achieve high heat transfer rates due to the large surface area available for heat transfer.

Versatility: Shell and tube heat exchangers can be used for a wide range of applications, including heating, cooling, condensing, and evaporating.

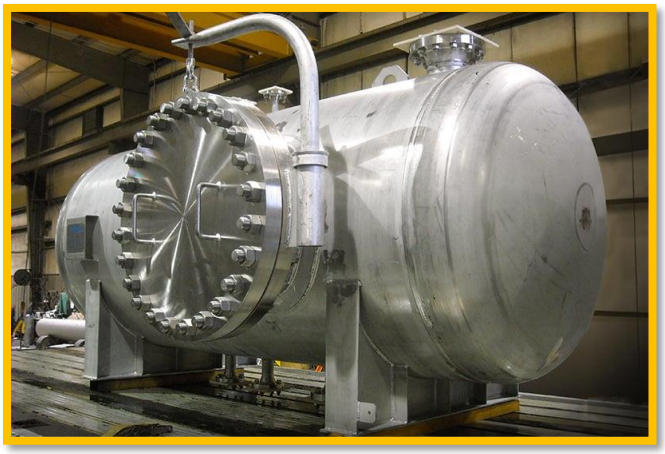
Durability: Shell and tube heat exchangers are durable and can withstand high temperatures and pressures, making them suitable for use in harsh industrial environments.

Easy Maintenance: Shell and tube heat exchangers are easy to maintain and repair since individual tubes can be replaced without the need to replace the entire unit.

FIXED EQUIPMENT

PRESSURE VESSEL

Pressure vessels are containers designed to hold gases or liquids at a pressure substantially different from the ambient pressure. These vessels are used in a wide range of industrial processes and applications where the containment of high-pressure fluids or gases is necessary. Pressure vessels are critical components in industries such as chemical processing, oil and gas, petrochemical, power generation, and many others.
Key characteristics and functions of pressure vessels include:



Pressure Containment: The primary function of a pressure vessel is to safely contain fluids or gases at pressures higher than atmospheric pressure. This requires the vessel to be designed, manufactured, and inspected to meet stringent safety standards and codes to prevent leaks or ruptures.

Material Selection: Pressure vessels are constructed from various materials, including metals, alloys, and composites, chosen based on factors such as the operating pressure, temperature, and the nature of the contained fluid. Common materials include carbon steel, stainless steel, aluminum, and high-strength alloys.

Design Considerations: Pressure vessel design involves considerations such as wall thickness, geometry, stress analysis, and the inclusion of features like nozzles, manways, and support structures. The design must ensure the vessel's integrity under the operating conditions and potential external forces.

Safety Standards and Regulations: Pressure vessels are subject to stringent regulatory requirements, codes, and standards to ensure their safe operation. These standards, such as ASME Boiler and Pressure Vessel Code, govern the design, fabrication, inspection, and testing of pressure vessels to mitigate the risk of failure.

Pressure vessels come in various shapes and sizes, including cylindrical, spherical, and conical designs, and are used for applications such as storage tanks, reactors, heat exchangers, distillation columns, and more. They play a critical role in industrial processes that involve the containment of pressurized fluids and gases, and their safe and reliable operation is essential for ensuring the integrity of the systems in which they are employed.

PROCESS PACKAGES

SELF-CLEANING FILTER PACKAGES

SAMAN ARIA PETROLEUM manufactures a wide range of Self-Cleaning Filter Systems to meet your needs for liquid filtration. Our Self-Cleaning Filter Systems are designed to be excellent for use in the filtration of liquids in various industries.

Automatic self-cleaning filter packages are advanced filtration systems designed to remove debris and contaminants from liquids and gases without the need for manual cleaning or maintenance. These packages typically include a self-cleaning filter unit, control panel, and necessary piping and valves for installation.

The self-cleaning filter unit is equipped with a mechanism that automatically removes accumulated debris from the filter element, ensuring continuous and efficient filtration without interruption. The control panel allows for easy monitoring and adjustment of the filtration process, and can be integrated with other systems for steady operation.

These filter packages are commonly used in industrial applications such as water treatment, oil and gas processing, chemical processing, and food and beverage production. They are ideal for applications where continuous, reliable filtration is essential and manual cleaning is impractical or time-consuming.

The fluid flows into the screen inside from the filter inlet, gets through the screen and flows out from the outlet. The impurity particles are blocked by the screen mesh. After the accumulation of more particles, the filtration pressure drop rises to preset value.

The control system triggers the cleaning sequences. Open the back-flushing valve and the auxiliary back-flushing drain. The gear motor drives the reciprocating scanner at the same time. The dual-channel back-flushing tube moves helically and cleans the screen inside with suction nozzles. After all the screen area is scanned and cleaned by the suction nozzles, one back-flushing cycle is completed. During back-flushing, the filtration goes on and only very low fluctuation of flow rate and outlet pressure happens.

PROCESS PACKAGES

COALESCING PACKAGE

At SAMAN ARIA PETROLEUM, we take pride in introducing our cutting-edge coalescing packages, designed to revolutionize industrial filtration processes. These packages represent the pinnacle of efficiency, ensuring that your operations benefit from unparalleled separation and purification capabilities.

Some of the key features of our design are:

1. **Exceptional Filtration Performance**:
Our coalescing packages are engineered to deliver exceptional filtration performance, effectively removing contaminants such as liquids and particulates from gases. This ensures the integrity and longevity of critical equipment downstream.
2. **Innovative Coalescing Technology:**
Leveraging state-of-the-art coalescing technology, our packages facilitate the merging of fine droplets into larger, more manageable particles. This innovative approach enhances separation efficiency and contributes to the overall reliability of your processes.

3. **Robust Construction:**
Crafted from high-quality materials, our coalescing packages are built to withstand the rigors of industrial environments. Robust construction guarantees longevity and minimal maintenance requirements, providing a cost-effective solution for your filtration needs.

4. **Versatility in Applications:**
Whether in oil and gas processing, petrochemical industries, or other industrial settings, our coalescing packages offer versatile solutions. Adaptability is a core feature, allowing seamless integration into various processes.

Coalescing packages could be used in the following applications:

Gas Filtration: Ideal for removing liquid aerosols and solid particles from gases in natural gas processing plants and pipelines.

Compressed Air Systems: Ensures the delivery of clean, dry air by removing moisture and particulates, preventing damage to downstream equipment.

Chemical Processing: Provides effective separation in chemical processes, contributing to product purity and process efficiency.

As with all our products, our coalescing packages undergo rigorous testing to meet and exceed industry standards. We are committed to delivering filtration solutions that enhance the reliability and performance of your industrial processes.

PROCESS PACKAGES

REFRIGERATION PACKAGE

Our industrial refrigeration packages are engineered for reliability, efficiency, and optimal performance in diverse industrial settings. From large-scale refrigeration systems for petrochemical plants to compact solutions for food processing facilities, our product range caters to a wide spectrum of applications. Each package is meticulously designed to ensure precision cooling, energy efficiency, and minimal environmental impact.

Some of the key features of our design are:

1. Robust Construction: Our refrigeration packages boast robust construction using high-quality materials, ensuring durability and longevity even in the most demanding environments.
2. Energy Efficiency: We prioritize energy efficiency in our designs, incorporating advanced technologies to minimize power consumption without compromising performance.
3. Customization Options: Recognizing that every industrial
setting is unique, we offer customization options to tailor our refrigeration packages to specific project requirements, ensuring seamless integration.
4. Cutting-Edge Refrigeration Technology: Our packages feature the latest advancements in refrigeration technology, guaranteeing precise temperature control and reliability. Our industrial refrigeration packages find applications across various industries, including but not limited to:

- Oil and Gas Processing Plants
- Petrochemical Industries
- Food and Beverage Processing
- Cold Storage Facilities
- Pharmaceutical Manufacturing

DOSING PACKAGE

By automating the dosing process, the risk of human error is reduced, and the system can be programmed to deliver the correct amount of chemical at the right time. This can lead to improved efficiency, cost savings, and better overall performance of the system being treated.

A chemical dosing package is a system that is used to accurately and safely add specific chemicals or substances to a fluid or gas in a controlled manner. This package typically includes a dosing pump, chemical storage tank, and control system.

The dosing pump is responsible for delivering a precise amount of the chemical into the fluid or gas being treated. The chemical storage tank holds the chemical and can be refilled as needed. The control system monitors and regulates the dosing pump, ensuring that the correct amount of chemical is added at the right time.

Chemical dosing packages are commonly used in industrial and commercial settings, such as water treatment plants, wastewater treatment facilities, and chemical processing plants. They can be used to add chemicals such as chlorine, fluoride, coagulants, and pH adjusters to water, as well as other substances to various fluids and gases.

PROCESS PACKAGES

DEHYDRATION PACKAGE

Gas drying aims to prevent hydrate formation and free water condensation in gases. It is crucial in natural gas systems to avoid equipment blockage and corrosion issues, both for transportation facilities and downstream cold process.

Industries such as petrochemical, pharmaceuticals, food and beverage, electronics, and manufacturing require precise humidity control to ensure product quality, equipment performance, and worker comfort. Excessive moisture in the air can lead to issues such as mold growth, corrosion, product spoilage, and inefficient production processes.

Dehydration packages and regeneration packages are designed to address these challenges by providing customized solutions to meet the specific requirements of each industry. They can be used to maintain consistent humidity levels in production areas, storage facilities, cleanrooms, and other critical spaces.

Key components of a Dehydration package may include:

Dehydrators: These are the primary devices used to remove moisture from the gas. They may include desiccant Dehydrators, refrigeration-based Dehydrators, or a combination of both, depending on the specific needs of the industry.

Ductwork: Properly designed ductwork is essential for efficiently moving air to and from the Dehydration equipment and throughout the facility.

Controls: Advanced control systems are used to monitor and adjust humidity levels, as well as to integrate the Dehydration package with other HVAC systems.

Overall, Dehydration packages play a crucial role in maintaining a controlled environment in industrial settings, helping to protect products, equipment, and processes from the damaging effects of excess moisture. They are an essential investment for industries that require precise humidity control to ensure quality, safety, and efficiency.

INTERNALS & ELEMENTS

PROCESS FILTERS

GASOLINE / LIQUID FUEL FILTERS

The purpose of the liquid fuel filtration is the protection of the system components further downstream in the system, such as injection pumps, injection nozzles and other engine parts. The contamination consists among others of sand, pipe scale and dust, and are originated from the production process, the transport and the storage.

The filter range incorporates pleated paper filters (with large surface area), pleated fiberglass-based paper (with large filter area and fine filtration) and depth type filters (with large solids holding capability).

- Large surface area offers maximum contamination holding capacity. Depth type of filters over superior contamination holding capacity.
- High flow rate, low initial pressure drops.
- Micron rating from 75 micron down to 0.5 micron. Cartridges are dimensional interchangeable.
- Cartridges to fit most popular industry filter vessels.
- Applications in fuel filtration systems include – but are not limited to – jet fuel, kerosene, naphtha, diesel fuel, gas oil, gasoline, propylene, butane, propane, etc.

DRY GAS FILTERS

If the gas contains only solid impurities, Dry gas filter is the best choice. It can filter dust, rust, dirt and other solid impurities from the gas, and get highly purified gas.
Dry Gas Filters are used when a highly efficient filtering system for the removal of solid contaminants is required.

Application

1. Natural gas metering station, sub-transmission station, compressor station, pigging station, city gate station, etc.
2. Gas pipeline gas purification
3. Chemical gas and other gas purification

INTERNALS & ELEMENTS

LIQUID HYDROCARBON FINE FILTERS

Liquid hydrocarbon filters are typically made of treated cellulose, fiberglass, or synthetic media, modified with various chemicals to obtain a surface which can withstand in liquid or aqueous environment.
Cellulose media can give an absolute filtration rating so is a very favorite media for all applications. These pleated filters are designed for applications with large flow and contaminant requirements and are available in various grades and configurations of high-performance efficiency.

COTTON SOCK FILTERS (AMINE / GLYCOL)

Cotton Sock filters are a type of particulate filter made of cloth such as cotton that remove any solid particles that the glycol accumulated. On a glycol unit, theses filters are place before the carbon filter for the initial pressure drop.

These filters are available in different lengths from 10”, 20”, 30”, 36”, 40” to 72”, but the inside dimeter of all is constant:

- Spring side: 27 mm
- Fitting side: 35 mm

Removal efficiency of these filters are designed above 98%

FUEL GAS FILTERS

Gas Turbines require high purity fuel gas for optimal performance and endurance. A Fuel Gas Conditioning Package makes sure that gas entering the turbine is conditioned correctly to maintain optimal turbine health. Filtration is an important part of fuel gas conditioning, as it ensures no particulate or liquid contaminations to enter the turbine and cause pre-mature turbine failure.

Fuel gas cleanliness level is an important factor in the consistent operations of compressors, turbines, and Low NOx burners. Poor removal of solids can lead to poor combustion, high fuel usage.

High-efficiency Low NOx burner tips are also susceptible to fouling and coking when liquids or solids are present.
SAMAN ARIA’s Fuel gas filters are the most reliable solution in this field.

INTERNALS & ELEMENTS

COALESCERS

LIQUID-GAS COALESCERS

Coalescence is the process of causing an agglomeration (coming together) of liquid aerosols to form larger droplets which are large enough to be drained away gravitationally.

The Liquid-Gas cartridge consists of several progressive layers which perform specific functions; from separating solid particles to liquid molecules from a gas flow.

Chemically treating the coalescer, lowers the surface energy of the medium and promotes rapid drainage of the coalesced liquids. Benefits of the surface treatment include increased capacity for liquid challenges, smaller overall assembly sizes, lower pressure drop, and improved ability to recover from liquid slugs.

LIQUID-GAS COALESCER is recommended for a wide range of gas filtration applications, including:

- Protecting compressors and turbines
- Protecting low and ultra-low NOx burners by cleaning fuel gas
- Removing lubrication oil, water, compressor wear products, corrosion products, and other solids from effluent gas streams
- Minimizing foaming tendencies in sweetening and dehydration units
- Minimizing amine and glycol losses downstream of gas sweetening and dehydration units
- Cleaning dirty fuel gas and instrument gas
- Controlling injection well plugging during gas flooding
- Protecting catalysts, desiccants and absorbents
- Removing lube oil from ammonia gas

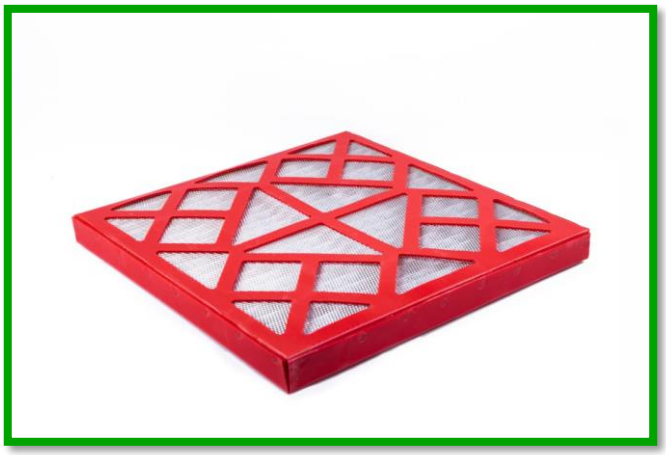
LIQUID-LIQUID COALESCERS

Liquid-Liquid Coalescers separate oil-water mixtures with the principle of coalescence, the merging of small droplets to larger ones. For this purpose, the mixture is passed through specially treated coalescence media.

The specially treated coalescence media and their surface structure ensures that the disperse phase (water droplets in oil or oil droplets in water) combine to form larger droplets. A nonstable emulsion can thus be separated. The droplets enlarged by our coalescence cartridges can then be separated using the difference in density.

INTERNALS & ELEMENTS

AIR FILTERS



PANEL FILTERS

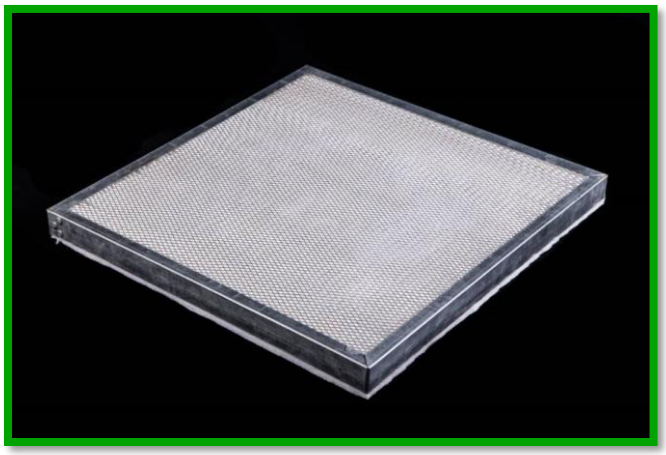
These Panel Filters offer high filtration to protect HVAC system and indoor air against particulates while also minimizing air pressure drop off to keep system running at peak efficiency.
Theses filters best used as a pre-filter or for heavy-duty commercial, industrial or pharmaceutical applications where high dust holding is required.

- Excellent as a pre-filter
- Disposable pleated filter
- Wide selection range
- High loft media increases dust holding capacity

METAL FRAMED PLEATED PANEL FILTER

Commonly used on supply air applications where card frames can collapse. Usually rated as G3 & G4 efficiency

- Sizes are made to order to suit requirements
- Galvanized frame
- Non-Combustible Pleated Panel Filter
- Disposable Panel Air Filter
- Acts as a first stage filter
- Extended Surface
- Large Dust Holding Capacity



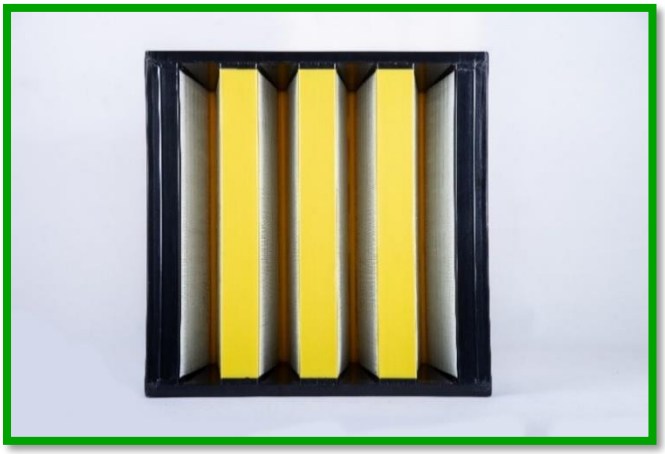
MULTI-BAG PRE-FILTERS

MULTI-BAG (PRE-) FILTERS are used as a pre- or fine filter in air conditioning systems among air treatment cabinets, air conditioning systems, public areas, and as a pre-filter in cleanrooms and the industry.
The filter is made from both polymer and glass fibres. The filter is assembled in a steel or aluminium frame.

high dust holding capacity and robust pocket design are particularly suited for difficult operating conditions, including variable air volume, turbulent airflow, and repeated fan shutdown. When used as a prefilter, our multi-bag filter protects higher efficiency filters from unnecessary dust loading, prolonging their service life.

As a result, the frequency with which final filters need to be changed is reduced, increasing the cost effectiveness of the air handling system. This filter is classified from G3 to F9 in accordance with EN 779.

INTERNALS & ELEMENTS



COMPACT (W TYPE) TURBINE AIR INTAKE FILTERS

Compact filters owe their name to their compact, space-saving construction. They provide maximum media area within minimum volume, offering an optimum combination of high filtration efficiency and low pressure drop. As a result, compact filters attain long service life even when used with high volume flow rates and high inlet particulate concentrations.

- EN 779 filter classes F7, F8 and F9
- Water-repellent media in corrosion-proof plastic frame
- Filter media joined to aerodynamically optimized plastic frame with cast airtight joint
- Reliable operation even in highly humid air
- Reliable operation at service temperatures up to 80 °C

CONICAL/CYLINDRICAL PAIR TURBINE AIR INTAKE FILTERS

Conical and Cylindrical filter cartridge sets come in a variety of configurations:
Conical/Cylindrical, Conical/Conical & Cylindrical/Cylindrical and are ideal for gas turbine air intake applications.

These common configurations are primarily used in pulsing systems, but they can also be installed where the pulsing system has been disabled. The Conical and Cylindrical cartridges can be equipped with any filter media classes from F7, F8 and F9 according to EN 779 ensuring high filtration efficiency in all operating environments.

The Conical and Cylindrical filters feature high surface areas, low-pressure drop and can be installed either horizontally and vertically.

Normally these filters are made of mixture of polyester & cellulose and Nanofiber media. These media have much better pleat ability & dimensional stability. Pleated filter media offer high filtration efficiency, very fine retention level, easy clean ability & aesthetically good product than normal media.

These filters Gives exceptionally low pressure drop at high efficiency levels (98%) and provide an optimized ratio between filtering area, fold depth, and number of folds for high dust capacity.
Media is resistant to moisture and humidity.

INTERNALS & ELEMENTS

HEPA / ULPA FILTERS

Both HEPA and ULPA filters have been designed to trap very small particulate contaminants from an air stream by forcing air through a fine mesh. Typically composed of fiberglass randomly arranged forming a dense mat, fiber diameters are between 0.5 and 2 µm. A combination of three primary methods is used to trap particulates. Diffusion, interception and inertial impaction. They will not remove gasses or odors.

According to the United States Department of Energy (DOE), a HEPA filter should remove airborne particles 0.3 µm in diameter and ULPA filters should remove 0.1 µm in diameter. Rated at removing 99.999% of airborne contaminants, ULPA filters are considered more efficient than HEPA filters. A HEPA filters efficiency rating is 99.995%.

HEPA efficiency: 99.995% removing airborne particles
HEPA provide an ISO Class 5
ULPA efficiency: 99.999% removing airborne particles
ULPA provide an ISO Class 3

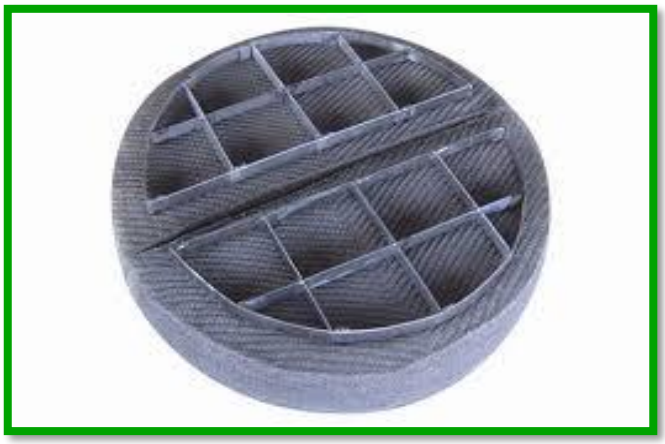
BAG FILTERS

Most bag houses use long, cylindrical dust collection filter bags (or tubes) made of woven or felted fabric as a filter medium.
Dust collection filter bags are cleaned by a short burst of compressed air injected through a common manifold over a row of bags. The compressed air is accelerated by a venturi nozzle mounted at the reverse-jet baghouse top of the bag.

- Size: Customized
- Fitting: Snap Band, Collar Type, Ring Type
- Micron Rating: 1 to 500
- Media: Nomex, Polyester, Glass Fiber
- Temperature: Ambient to 350°C

INTERNALS & ELEMENTS

METAL FILTERS



DEMISTER PADS

When the gas with mist rises at a constant speed and passes through the wire mesh, the rising mist will collide with the mesh filament and attached to the surface filament due to the inertia effect. The mist will be diffuse on the filament surface and the droplet will follow along the filaments of the two-wire intersection. The droplet will grow bigger and isolate from the filament until the droplets gravity exceeding gas rising force and liquid surface tension force while there is little gas passing through the demister pad.

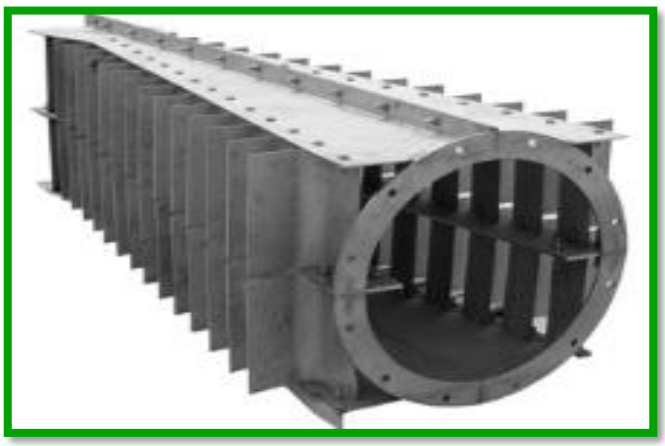
FIBER BED CANDLE DEMISTERS

It is a continuous duty collector fiber device, which is used for controlling mist in various manufacturing processes. It can remove the fine particles from a gas stream.

The fiber bed candle demisters are placed vertically. When the gas passes through, the trapped liquid particles are filter out the demisters bed. The flow direction can be from the inside-out or outside-in bed according to the site condition and installation ways.

Features of fiber demister pad

- Corrosion resistance.
- Extreme temperature resistance.
- Easy to replace worn parts.
- High filtering efficiency
- Capture fog particles of down to 1 micron



FEED INLET DISTRIBUTION DEVICE

Feed inlet devices provide an effective solution for vapor or gas distribution, and can solve liquid entrainment problems in many types of equipment such as:

- Scrubbing, absorption, stripping or distillation columns
- Evaporators
- Knock-out drums
- Feed inlet separators
- 2-phase and 3-phase separators
- Gas dehydration plants
- Compression systems and suction drums

INTERNALS & ELEMENTS

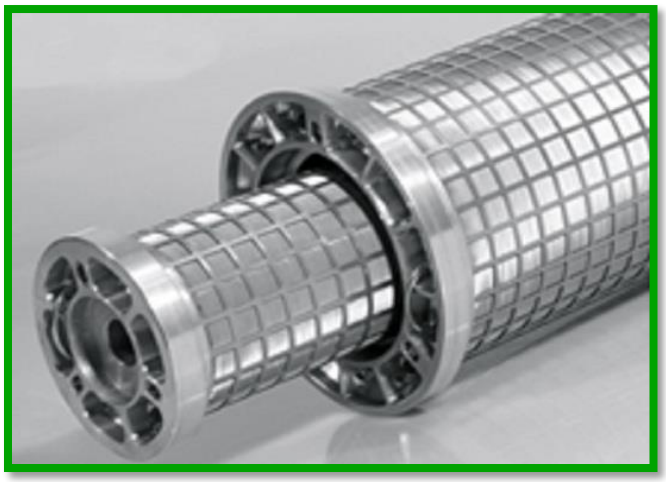
PLEATED METAL MESH FILTER

Pleated wire mesh filter cartridges are made of pleated wire cloth filter media. Multi-layers of wire mesh are spot welded and then pleated and pressed. The pleats are welded by two ends to form the cartridge body. Then the hardware (end fitting, adapter) is welded with the body.

The pleated wire mesh filter cartridges are good substitute for non-metallic filter cartridge as they can withstand higher temperature & pressure and can be backwashed and reusable, in applications of steam, hot air and liquid filtration.

TWIN COMPRESSOR METAL FILTER

Twin filters are consisting of two cylindrical filters with different mesh sizes. Standard flow direction is from outside to inside. Outer cylindrical filter has coarser removal rating and the inner one has a finer removal rating.
There is generally a space of a max. 50mm between two filters, meanwhile the upper side of the filters are fixed to each other.
SS 304, 304L, 316 and 316L are the mostly used material for stainless cartridge.



SINTERED MESH FILTERS

Sintered mesh filter cartridge is mainly made of high-quality stainless-steel mesh. They have high mechanical strength and pressure tolerance. They are corrosion resistant and easy to clean. Featured by high durability and long service life.

Application

- Gas distribution in the fluidized bed.
- Washing and drying in pharmaceutical industry.
- Polymer filtration in chemical industry.
- Water treatment in the field of beverage.
- Filtration of gas in the field of food.
- Filtration of hydraulic oil in machinery industry.

INTERNALS & ELEMENTS

BASKET FILTERS

BASKET FILTERS

Basket filters widely used to separate solids from liquids or gases. Each product is custom manufactured to the application, considering pressure, flow rate, filtration rating and other aspect of the working environment.

Each filter design varies and can be manufactured from perforated plate, wire mesh, knitted mesh or wedge wire.
Reusable baskets provide liquid straining and filtering at various levels of mesh and micron ratings. The lining specified is embedded between two perforated structural walls, allowing sustained pressure in both directions, and protecting it from harsh brushing or hose spray while cleaning. Fully welded construction assures that no particle bypass occurs around the welded seams. Ideally suited for high temperature applications and/or aggressive service, baskets are constructed of Stainless Steel and include a Buna gasket in some cases.

Features & Benefits:

- Large-area, heavy-duty baskets.
- Low pressure drops.
- Covers are O-Ring sealed.
- Easy to clean.
- Filtration rating available from 5 µm to 2000 µm

CONICAL INLINE STRAINERS

Conical Strainers are known as Temporary Strainers, and are extensively used as sweepers for flushing pipeline debris prior to commissioning of plants & equipment.

Their main function is to remove objects such as welding electrode butts, slag, pliers, spanners, nut-bolts etc. Conical strainers are for temporary use and thrown away after initial cleaning of the system. The down side to a

These strainers protect screen of Y and Basket strainers, cartridge of micro filters and other expensive piping equipment.

They are fitted between two flanges therefore requiring an accessible section of pipe.

Where the amount of material to be removed from the flow is relatively small, resulting in long intervals between screen cleanings, the strainer screen is manually cleaned by shutting down the line and removing the strainer cap.

They are used in pipelines to protect pumps, meters, control valves, steam traps and other process equipment.

CLIENTS & REFERENCES

The company has several joint co-operation experiences and technical alliances with few reputable international technology provider companies to extend our resources and capabilities in our field of activities. Based on excellent efficiency reports - provided by end-users - on similar applications, we hope it will lead to similar results and efficiencies in your referenced application. Technical issues have discussed in following.

Some of our clients are listed below:

Bandar Abbas Oil Refinery

Bandar Imam Petrochemical Complex

Borzouyeh Petrochemical Company

Hashemi Nejad (Khangiran) Gas Treating Plant

Iranian Offshore Engineering and Construction Company

Tabriz Oil Refining Company

South Pars Company

Laleh Petrochemical Company

Petrochemical Research & Technology Co.

Oil Turbo Compressor Company

Namvaran Consulting Engineers

National Iranian Oil Pipeline & Telecom Co.

Bistoon Petrochemical Company

Zagros Oil & Gas Production Company

Bushehr Petrochemical Company

Fuchs Iranian Oil company

Karoon Petrochemical Company

National Iranian South Oil Company

Ilam Gas Treating Plant

National Iranian Central Oil Company

Pardis Petrochemical Company

Arvand Petrochemical Company

Maroon Petrochemical Company

Mobin Petrochemical Company

We are proud that most of our clients have returned to us again after first cooperation, and we hope to make a similar experience with your esteemed company on current project again.

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