A Long Experience in Energy Equipment and one Goal: The Customer’s satisfaction.

Cartridge Filters,
Fuel Gas Filters, Gas Scrubbers & Filter Separators
Established in 1907, TGT – Tormene Gas Technology is a successful Company that for a hundred years has been dedicating its activity to the design and production of Natural Gas Treatment Equipment for industrial, civil and power generation applications, offering a variety of products to give a high degree of customisation and an extremely high standard of quality and service. Nowadays, TGT production capacity has been increased with an impressive new plant, Tecnoforge Systems Division, located in Piacenza where extensive manufacturing support is available. In 2010 TGT Division changes name into Valvitalia Systems Division.

Valvitalia Systems Division activities includes: developing, design, manufacturing and supplying of filters with vertical and horizontal configuration; design codes:

- ASME Sec.VIII Div. 1 and 2;
- BS;
- AD Mehrblatt;
- U Stamped;
- PED;
- Others upon request.
Cartridge Filters

Applications
The cartridge filters are designed to remove all solid particle contaminants such as dirt, rust pipeline scale from Natural Gas in Chemical Plants, Pipeline Stations, Reduction and Metering stations, Refineries and other processing applications. Cartridge Filters protect meters, regulators, valves and other related in-line equipments, by effectively removing unwanted particles from the Gas stream.

Operating Principle
The cartridge filters are able to guarantee high efficiency standard by removing the solid contaminants at relatively pressure drop. Upon entering the larger and heavier particles settle to the bottom of the inlet chamber. And then the gas, by passing through the filter elements which trap and retain the finer particles, exits clean to the top of the vessel. It could be inserted a “quick opening” end closure for access to, cleaning or replacement of the filter elements.

Filtering Cartridge
Valvitalia Systems Division is able to provide engineered, designed, and manufactured, range of medias, to provide the reliability and consistency in performance. This is necessary for the delivery of outstanding operating efficiency in a wide variety of filtration applications. Valvitalia Systems Division’s experienced Sales and Application Engineers can assist you in selecting the correct element to solve your particular filtration problem.

Efficiency
The efficiency of this kind of filter is a typical function of particle size and distribution, particle loading, element face velocity and pressure drop. A typical performance efficiency is 100% for particles of 3 micron and larger and 99% for particles between 0.5-3 micron. On the left is shown a typical performance diagram.
Operating Principle

The extractor consists of a vanes pack formed by a series of parallel plates complete with an intermediate series of hooks. The gas, flowing through the vanes, is forced to change direction several times and the heavier liquid droplets are then smashed against the wetted walls. The small particles are coalesced by agitation and surface contact. The agglomerated liquid is then drained perpendicular to the gas flow into the sump.

Efficiency

The efficiency of this kind of filter is a typical function of particle size and distribution, particle loading, element face velocity and pressure drop. The vane mist extractor is able to remove liquid droplets up to 8 microns and larger.

Cross section KO-Drum
Multicyclone Filters

Models - Production Range
Single stage - Single cyclone Mod. CYC-S
Single stage - Multiple cyclones Mod. CYC-M
Dual stage - Single cyclone Mod. CYC-S-D
Dual stage - Multiple cyclones Mod. CYC-M-D

Applications
The cyclone separator is used in a wide range of applications in the natural gas and chemical process industries such as:
● Metering and reducing Stations: removing liquid hydrocarbons, water and sand
● Natural Gas field application
● Gas and Fuel transmission lines
● Meter Installations
● Gas compressors

Efficiency
The efficiency of this kind of filter is a typical function of particle size and distribution, particle loading, element face velocity and pressure drop. A typical performance efficiency is 100% for solid particles of 5 microns and larger and in the dual stage configuration (cyclone and cartridge) is 100% for solid particles of 3 microns and larger. In addition the separator can guarantee an outlet gas with less than 10 liters of liquid per million cubic meter.

Operating principle
The operating principle of the cyclone filter separator is based on the action of centrifugal forces that separate the solid and liquid parts. The gas, entering into the cyclone, forces the particulates against the cyclone walls moving the liquid droplets and the solid particles to the outer periphery of the tube and then dropping them into the collection chamber at the bottom of the vessel. The cleaned gas exits instead to the top of the vessel to the eventually second stage cartridge dry separator to remove the finest solid particles. The cyclone filter separator could be designed with a single cyclone action or with a multiple cyclones action in order to raise the efficiency of the process.
Dual-stage Filters

Operating principle
The absolute filter separator is designed to be installed in a vertical or in a horizontal configuration, it could be inserted a "quick opening" end closure for access to the filter elements. The gas enters the vessel and encounters a labyrinth of pipes that give a centrifugal motion to the particles of 10 micron and above to the bottom of the filter. Smaller particles which exhibit significant brownian movement collide with each other coalescing to a single droplet. Anelastic collision of solids produce then aggregates which subsequently are swept by the liquid into the sump. Particles that remain suspended encounter the filter coalescer elements and then they collide with and adhere to the fibers or other droplets and coalesce. This agglomerated liquid is then forced through the media by the drag of the gas for the second stage separation. The second stage section, which is the vane mist separator, by changing the direction of the vapour to generate an increase in apparent density of the liquid phase, trap all the liquid droplets in the hooks draining the same into the sump.

Filtering Cartridge
The filtering elements are engineered, designed and manufactured, in a variety of medias, to provide the reliability and consistency in performance. This is necessary for the delivery of outstanding operating efficiency in a wide variety of filtration applications. Valvitalia Systems Division's experienced Sales and Application Engineers can assist you in selecting the correct element to solve your particular filtration problem.

Production Range
Vertical Type  Mod. ABS-V
Horizontal Type  Mod. ABS-H

Applications
The absolute filter separator is a multi stage separator used in a variety of applications in the natural gas and chemical process industries such as:

- Metering and reduction Stations: removing liquid hydrocarbons, water, sand and pipe scale.
- Ahead of gas storage fields to prevent the injection or withdrawal of solids and liquids.
- On the suction side of the compressor to prevent wear from solids and liquids entrained in the gas stream.
- On a gas processing plants to remove solid and free liquids in order to prevent fouling of process equipment and poisoning of catalyst beds.
- Downstream of amine, glycol, potassium, carbonate sulfinol and absorption oil contactors to recover solutions and reduce solution losses.

Efficiency
The efficiency of this kind of filter is a typical function of particle size and distribution, particle loading, element face velocity and pressure drop. A typical performance efficiency is 100% for solid particles of 3 microns and larger and 99% for particles between 0.5-3 micron and 100% for liquid particles of 3 microns and larger.
Filtering Packages

Quick opening closure

- ASME Clamp type (Single and Double Bolts)
- Fac type

Spare Parts

Valvitalia Systems Division Quality is completed by the after sale assistance and a complete organisation which focus its own activity on care, technical support and spare part requests of the customer.

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Padova Plant.

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