

## AFS Series Filter Separators

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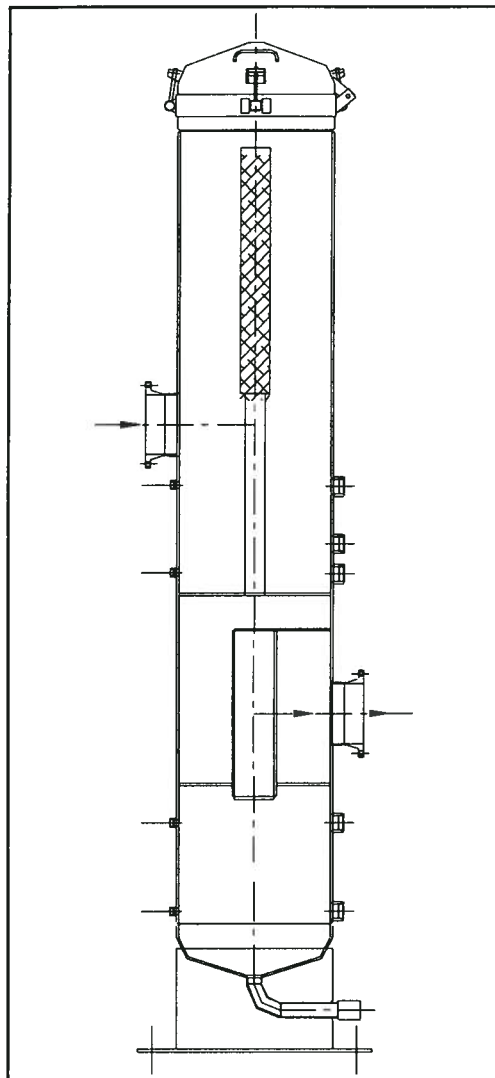
- High Efficiency Multi-Stage Separator for Removal of Liquid and Solid Particles from a Gas Stream over Entire Operating Range.
- 100% Removal of all Liquid & Solid Particles 3.0 Microns and Larger.
- 99% Removal of Solid Particles 0.5 to 3.0 Microns
- Capacity to Handle High Liquid Loads and Slugging.
- Horizontal or Vertical Design.
- Custom Designed for Individual Applications and Design Requirements.
- Optional Filters for additional Solids Retention and Increased Filter Life.
- Optional Separation Elements depending on Application.
- Easy Replacement of Filters through Full Opening or Reduced Vessel Closure.
- Superior Design with Substantial Savings.
- Rugged Construction/Long Life.
- Simple Maintenance with Quick Turnaround and Minimal Downtime.

### Typical Applications:

Anderson Filter Separators are an integral part of Compressor Stations, Underground Storage Projects, Gate Distribution Complexes, Refineries, Petrochemical and Natural Gas Processing Plants.

Typical Applications include:

- Ahead of Natural Gas Regulating Stations, City Gates and Distribution Facilities to remove water, condensed hydrocarbons, pipe scale and sand.
- Removal of Gas Pipeline Contaminants on the suction side of Compressor Stations; to prevent damage to compressor and cylinder and valve wear.
- Ahead of Gas Storage Fields to prevent Injection and Withdrawal of solids and liquids.
- Removal of gas contaminants in Fuel Gas Lines prior to Engines, Power and Industrial Plants.
- Ahead of Gas Processing Plants to remove solids and liquids to prevent fouling of Process Equipment and poisoning of Catalyst Beds.
- Downstream of Reciprocating Compressors remove Lubricating Oil that has carried over with the gas stream.
- Ahead of Solid Desiccant Beds to prevent liquid fracturing and dusting of the dry desiccant and fouling with paraffins or asphaltines.
- Removal of water and pipeline contaminants from the inlet gas stream to Dehydrating and Treating Plants.



## Principal of Operation:

The Anderson Filter Separator is a multi-stage separator that provides optimal removal of both Liquids and Solids from a gas stream. As the contaminated gas passes through the filter separator it must pass through several distinct regions or stages. Each stage has a specific purpose, and the cumulative effect provides a virtual contaminant free gas.

First, the contaminated gas encounters a large inlet plenum, which contains the filter support tubes. The filter support tubes hold and support the filter elements and space them away from the incoming gas flow. The gas stream velocity reduces in the plenum, and bulk separation occurs due to gravity. Further separation occurs as a result of the filter support tubes. The gas contaminants impinge on these tubes, coalesce into larger particles and drop to the lower portion of the inlet chamber. In addition, as the gas tries to negotiate this maze of tubes, a centrifugal force is imparted on the gas. This centrifugal force will remove liquid and solid particulate down to 10 microns. The separated liquids and solids then drain to the sump.

Next, the gas must pass through the filter elements. The solid particulate is captured on the surface of the filter, and in the depth of the filter media. The fine liquid particles flow through the elements, and coalesce with other liquid particles to form larger particles. These larger particles emerge from the inner core and are carried downstream to the final separation region. The filter elements are arranged in a triangular pith to provide the maximum number of filters, and filter area for a given vessel size. These elements are arranged to provide equal flow distribution across all filters, and simplified cleaning or replacement of all filters. Finally, the gas must pass through the Separation Chamber. This stage utilizes one of several Anderson High Efficiency Separation Elements. These elements will remove virtually all coalesced liquid flowing from the filter elements.

The separation elements include:

### Mesh Pads:

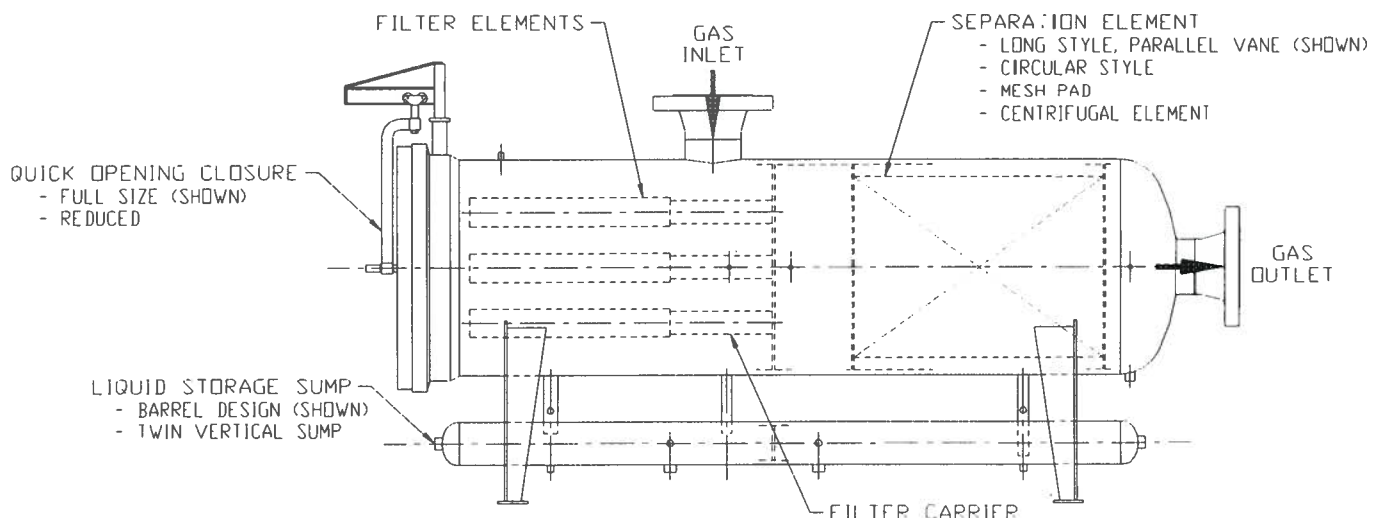
Two parallel mounted Mesh Pads that provide optimum efficiency over the entire flow range. Used only in horizontal applications

### Separation Vanes:

Anderson Pocket Type Vanes allow a higher gas throughput than vanes from other manufacturers. Vanes are mounted either parallel or perpendicular to the gas flow. When mounted parallel to flow, the vessel diameter is reduced, but the overall length increases. When mounted perpendicular to flow, the vessel diameter increases, but the overall length is reduced.

### Centrifugal:

Anderson Centrifugal Elements, primarily used in smaller Filter Separators in either the horizontal or vertical position.



# ANDERSON™ SEPARATOR COMPANY

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A S M E CODE STAMPS



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