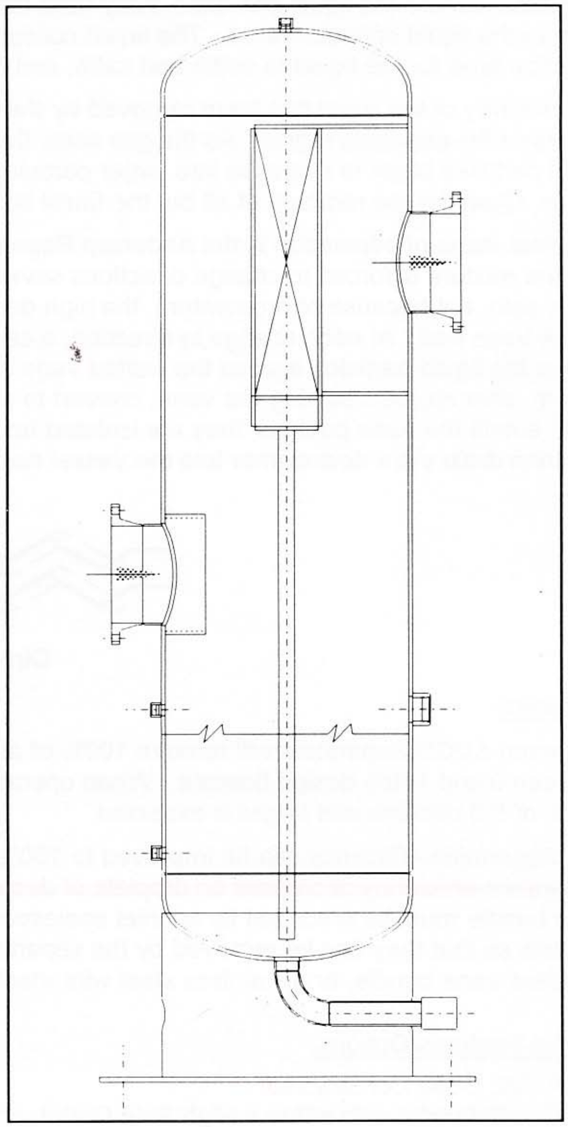
ANDERSON™

A Division Of The Clark•Reliance Corporation

AVGS Series Vertical Gas

- High Efficiency Separation of Entrained Liquids and Mists from a Gas or Vapor Stream.
- Capacity to Handle High Liquid Loads and Slugging.
- Removal of Liquid Particles 8.0 Microns and Larger.
- Low Pressure Drop.
- Superior Design.
- Rugged Construction/Long Life.
- Virtually No Maintenance



Design Advantages:

The Anderson AVGS Vertical Gas Separator utilizes the Anderson Pocket Type Vane. The Anderson Pocket Type Vane has several advantages over our competition's Hook-Type Vanes.

- Anderson Vanes have a shielded pocket for uninterrupted liquid collection and drainage. The draining liquid is protected from re-entrainment and thus able to handle an increased volume.
- Anderson Vanes have a lower pressure drop with increased capacity as compared to Hook-Type Vanes.
- Anderson Vanes provide a more laminar flow with lower turbulence due to advanced flow profile design.
- Anderson Vane Bundles are smaller in size compared to Hook-Type Vanes in similar applications. This results in a smaller, more efficient and economical design.

Typical Applications:

Anderson Vane Separators are used in applications where efficient liquid-gas separation is required, especially applications where heavy liquid loads are expected. Typical applications are found at Chemical & Petrochemical Plants, Refineries, and Natural Gas Pipelines. These applications include:

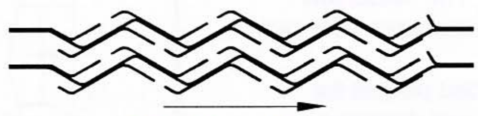
- Any application with an expected heavy incoming liquid load where the liquid to gas weight ratio is in excess of 5% by weight.
- Suction Side of Compressors
- Removal of Condensate and Lube Oil in Steam Lines
- Product Recovery
- Gas Transmission and Distribution
- Removal of Liquids Ahead of Desiccant Beds to Improve Desiccant Life.
- Removal & Recovery of Glycol Downstream of Glycol Contactors

Principal of Operation:

The Anderson AVGS Vertical Gas Separator is a high efficiency separator designed for removal of large amounts of liquid from a gas flow. As the gas enters the separator, it must pass through several phases of separation before exiting the separator. The primary stage of separation occurs as the incoming liquid laden gas encounters a Centrifugal Knock-Out Baffle. This baffle is successful at 1.) changing the direction of the gas, and imparting a centrifugal motion on the gas, which forces the liquid particles together, to the outside wall of the vessel, where the liquid can drain away from the rising gas. And 2.) knock-out slugs of liquid and direct them to the liquid collection area. The liquid collection area is located beneath the inlet, and provides adequate retention time for the liquid to settle and calm, and for gas to breakout of solution and escape the liquid.

The majority of the liquid has been removed by the knock-out baffle, and the gas now must pass upwards through a dis-engaging region. As the gas rises, the turbulence caused by the knock-out baffle, subsides, and liquid particles begin to coalesce into larger particles, and dis-engage from the rising gas due to gravity. This region allows for the removal of all but the finest liquid particles.

The final stage of separation is the Anderson Separation Vane. As the gas/liquid mixture enters the Vane Bundle, the mixture is forced to change directions several times. The low density gas can easily negotiate this tortuous path, but because of momentum, the high density liquid is unable to change direction without impinging on the vane wall. At each change in direction, a centrifugal force is imparted on the gas/liquid mixture, which throws the liquid particles against the wetted vane walls. These liquid droplets coalesce into larger particles, absorb other droplets striking the vane, convert to sheet flow and travel towards the vane pockets. Once the liquid enters the vane pockets, they are isolated from the gas stream, and drain by gravity into the vane sump, and then drain via a downcomer into the vessel sump.



Direction of Flow

Efficiency

Anderson AVGS Separators will remove 100% of all liquid particles 8.0 microns and larger when operating between 0 and 110% design flowrate. When operating at the design flowrate, a separation efficiency of 100% of 5.0 microns and larger is expected.

The Separation efficiency can be improved to 100% of 3.0 microns by the addition of an inlet coalescer. Separation efficiency decreases on droplets of decreasing size. In order to separate these smaller droplets, the vane bundle must be preceded by an inlet coalescer. The coalescer will increase the size of incoming liquid droplets so that they can be removed by the separation vanes. The inlet coalescer can either be a special hookless vane bundle, or a stainless steel wire mesh pad mounted on the vane face.

Design Features/Options:

- ASME Code Constructed.
- Low Side Inlet with either a High Side Outlet, or Top Outlet.
- Available Gauge Glass/Float Trap/Sight Flow Indicator/ Liquid Level Controller/Dump Valve upon request.
- Separation Vanes available in carbon steel, 304L and 316L
- Custom engineered, designed and fabricated.
- Optional Coalescer for Improved Efficiency.
- Optional Removable Vanes.