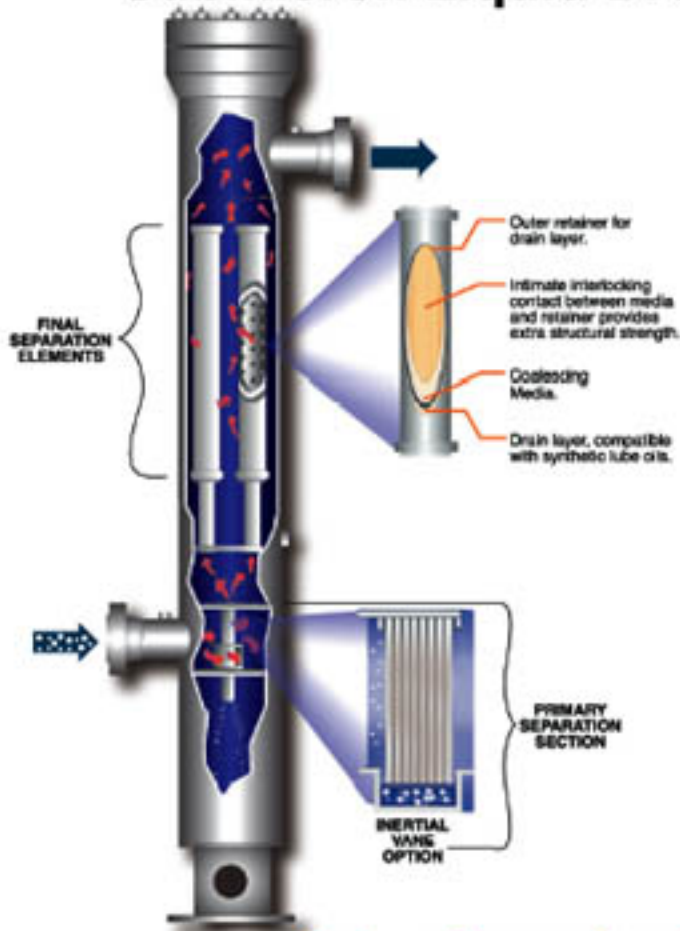




## For Maximum Separation Efficiency Of Submicron Liquid Droplets In Critical Services



### Design Features

The Peerless Absolute Separator is a multi-stage device. At the inlet of the Primary Separation Section, small diameter cyclones or vanes remove liquid and solid particles by utilizing the dynamics of centrifugal force and gravity. By removing the bulk of the entrained liquid in this stage, the Peerless design increases the life of the Final Separation Elements and holds the pressure drop buildup to a minimum. This allows for more time between changing the elements, reducing operating costs and downtime.

Replacement of the coalescer elements can be accomplished in a minimum amount of time and effort through the use of a full diameter closure. Both cyclone or vane mist extractor separators are completely maintenance-free, self-cleaning and contain no replacement or moving parts to cause a shutdown.

### Various Separation Designs

Separation Device Design Parameters	Inertial Vane	Coalescers	Centrifugal	Combination Filter Sep	Filters
Contaminant Removal	LIQUID	LIQUID	LIQUID & SOLIDS	LIQUID & SOLIDS	SOLIDS
Efficiency	HIGH	ULTRA-HIGH	HIGH	VERY HIGH	HIGH
$\Delta P$	LOW	MEDIUM	HIGH	MEDIUM	MEDIUM
Flow Range	FULL	FULL	4 to 10:1	FULL	FULL

### Typical Applications

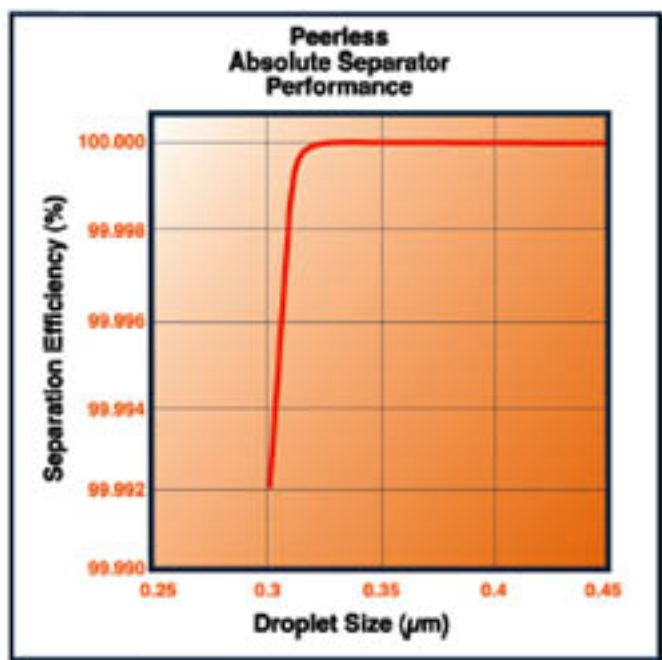
- Ammonia & urea plants
- Desiccant bed protection
- Chemical plants
- Oil mist removal
- In critical gas processes
- Fuel gas conditioning
- Molecular sieve protection
- Gas transmission/Metering



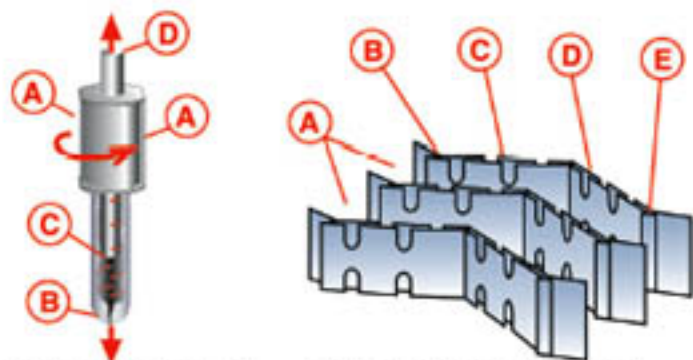
- Intrinsic 2-stage Configuration
- Flexible Primary Stage Separator Designs
- A Variety of Coalescer Media Efficiencies
- Guaranteed Performance
- Built to ASME Code or International Standards



This Absolute Separator is installed in a metering station in Canada. Its 99" ID housing utilizes a full diameter, quick-opening closure. This system is fitted with an 'On-line Monitoring System' to continually measure coalescing-filter element permeability.



A Peerless Absolute Separator can be designed to limit liquid carryover to less than 1 ppb. HEC element selection depends on your specific application and efficiency requirements. (See TechSpec #1001)



Peerless Cyclone Tube  
(See TecSpec #21000)

Typical Peerless Vane Element  
(See TecSpec #13000)

## Principle Of Operation

As the mist- and solids-laden gas enters the Primary Separation Section of the vessel, the entrained liquids and solid particles are subjected to centrifugal force. The gas enters the cyclone tube at two points (A) and sets up a swirling motion. Solid and liquid particles are thrown outwardly and drop from the tube at (B). The clean swirling gas reverses direction at the vortex (C) and rises through the exit portion of the tube (D).

In applications where solid particles are not a factor, vane mist extractors are used as the primary separator.

As the mist-laden gas enters the vane unit, it is divided into many vertical ribbons (A). As each ribbon of gas is subjected to changes of direction (B), semi-turbulence and rolling of the gas occurs against the vane walls (C). The entrained droplets are forced to make contact, impinge and adhere to the vane surface (D). The liquid droplets then move into the pockets (E) and out of the gas stream.

The Final Separation Section consists of multiple High Efficiency Coalescing elements (HEC). The gas and fine mists pass from the inside to the outside of the elements where the particles diffuse and impinge on the closely spaced surfaces. The liquid particles agglomerate into larger liquid droplets and emerge on the outer surface of the coalescing element. The liquid then runs down the element and into the liquid collection chamber. Gas, free of liquid particle entrainment, passes out the vessel discharge nozzle.

## Performance Guarantee

Peerless Absolute Separators meet separation efficiencies of 99.999% of droplets 0.3 to 0.6 microns in size with a maximum carryover of 0.001 PPM by mass depending on the coalescing media utilized.

**Consult a Peerless specialist for your separation, retrofit and spares requirements.**

[www.peerlessmfg.com](http://www.peerlessmfg.com)

### WORLD HEADQUARTERS

**Peerless Mfg. Co.**  
2819 Walnut Hill Lane  
Dallas, Texas 75229  
Phone: 214-357-6181  
Fax: 214-351-0194  
[sales@peerlessmfg.com](mailto:sales@peerlessmfg.com)

### EUROPE, AFRICA & MIDDLE EAST

**Peerless Europe Limited**  
Bridge House, 18 Bridge Street  
Halstead, Essex C09 1HT England  
Phone: 44-1787-478847  
FAX: 44-1787-473918  
[sales@peerlesseurope.com](mailto:sales@peerlesseurope.com)

### ASIA-PACIFIC

**Peerless Mfg.Co. (Regional Office)**  
No. 35 Jalan Pemimpin, #07-02  
Singapore 577176  
Phone: 656-354-2306  
FAX: 656-354-2297  
[peerlessmfg@pacific.net.sg](mailto:peerlessmfg@pacific.net.sg)