

Vortex Separators

Engineered solutions for the separation and storage of large volume liquids from natural gas.

Our Commitment

Taylor Forge's commitment to high quality solutions can be summed up in three attributes: integrity, collaboration and creativity. Taylor Forge shows integrity by not cutting corners or compromising practices, we collaborate with our customers by taking a consultative approach, and we apply creative solutions to our customers' needs and challenges. This combination has made us a leader in the manufacturing of vortex separation systems. We strive to understand the unique needs of each project in order to deliver the best solution.

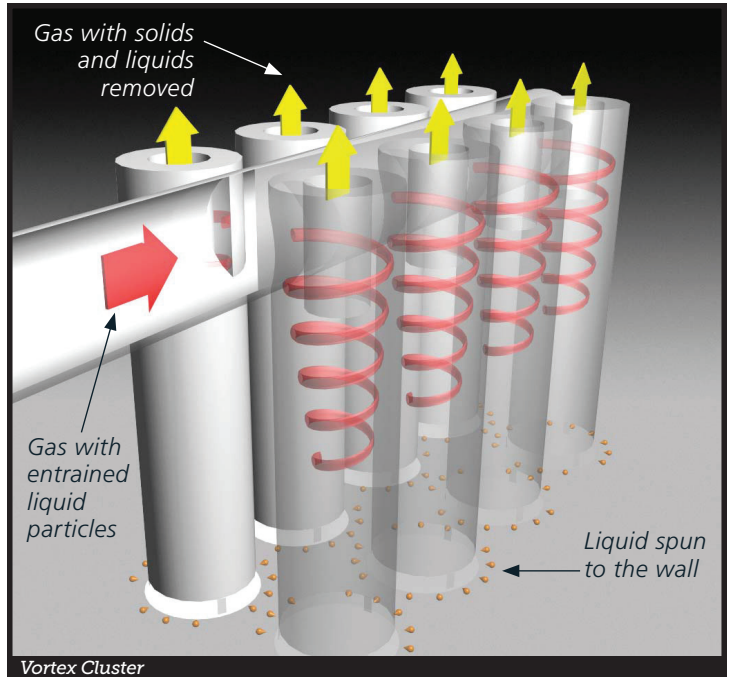
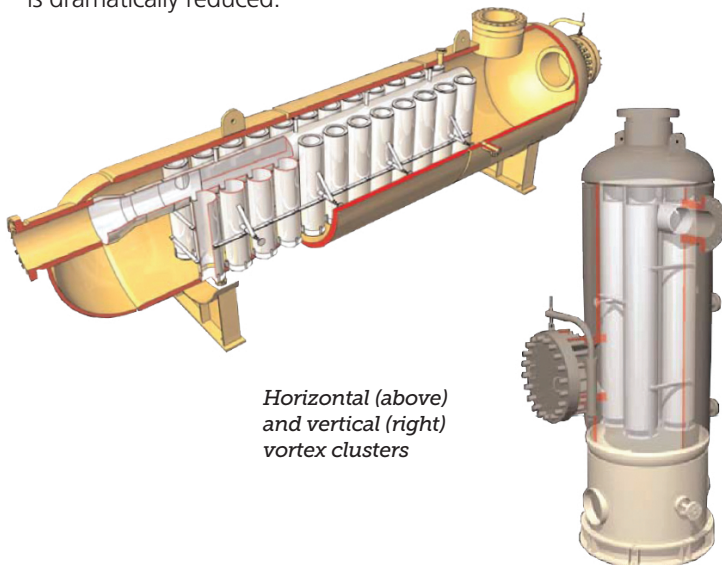
Vortex Technology

The Vortex Cluster

The "Vortex Cluster" internals use high-energy momentum of fluids to produce sufficient ΔP between liquid and gas, and promotes coalescence of same liquid to create larger droplets. This results in superior separation. **No Foam, No Additives.**

2-phase separation (gas/liquid) is the result of increased angular velocity, which creates a ΔP between liquid and gas. At optimum operating conditions, the vortex unit removes 99.9% of solids <.3 micron and entrained liquid particles down to <1 micron. This is further enhanced with reduced gas under carry. **No Foam, No Additives.**

3-phase separation (gas/liquid/liquid) will reduce retention times and provide improved water cut and oil in water. The controlled angular velocity promotes coalescence of smaller droplets to larger droplets when the inertial force on a droplet is greater than surface tension of a similar droplet. Because of a difference in density, the coalescence is achieved when the higher density droplet goes to the wall. The larger droplets created will then separate in the quiescent zone of the vessel. Residence time is dramatically reduced.

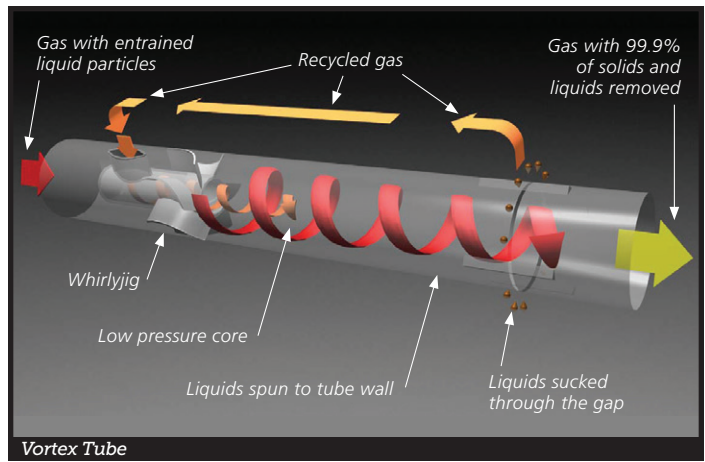


Technical information and design guidelines for separation products from Taylor Forge may be requested. Contact your Sales Representative at 913-294-5331 or email us at engineered@tfes.com.

The Vortex Tube

The vortex tube is suited for gas dominant separation. Curved vanes of the fixed vane assembly use the high-energy momentum of fluids to produce a high g-force which sends the liquids/solids against the vortex tube wall and creates a sufficient ΔP between liquid and gas to provide superior gas/liquid separation.

The curved vanes of the fixed vane assembly, or otherwise known as the whirlyjig, spin the inlet stream upon entry into the vortex tube. The resulting cyclonic action forces the free liquids and solids to the wall of the tube and flowing to the circumferential gap. The liquids and solids are sucked through the gap, together with a portion of the gas stream, into the annulus between the vortex tube and the body shell. The low-pressure core of the vortex creates suction at the gap. This suction or recycle is achieved by means of a single port from the fixed vane assembly into



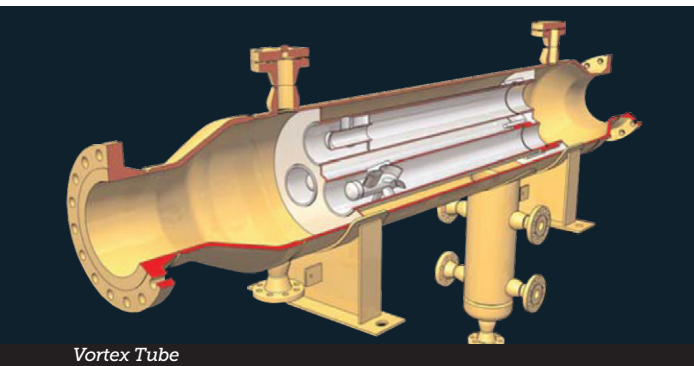
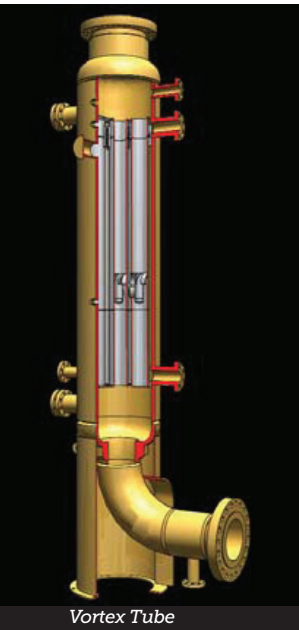
the annulus. The liquids/solids, having passed through the gap, drop out due to gravity and drain to the sump. The vortex tube then has the gas re-enter through the recycle port and merge once again with the main stream. The outcome is thoroughly scrubbed and liquid free gas exits the scrubber.

Vortex tubes may be horizontal or vertical in design. They may also be designed to handle surges of liquid/solids in our vertical or horizontal knock-outs.

The liquid sump/boot may be vertical (typical on single tube horizontal separators) or horizontal on multiple tube horizontal separators. The sump in a vertical separator is located below the Vortex Tubes.

Vessel, Vortex and Filter All in One Unit

Vortex scrubbers may be designed to work in conjunction with filter elements. Vortex scrubber tubes operate as clean as filter elements but do not get plugged by solids. This provides very extended filter element life and also removes the situations where you need dual filter separators, with bypass to allow changing elements without shutting down a compressor. Vortex scrubbers may also be teamed with vane/demister packs.



T/F TAYLOR FORGE

ENGINEERED SYSTEMS

Engineered Products Line



Slug Catchers



Scraper Traps



Pressure Vessels



*Shell & Tube
Heat Exchangers*



Cooler Header



*Vortex Technology
Separation*



*High Pressure Gas
Storage Vessels
for the Aerospace Industry*



*Extruded Outlets
& Headers*

About Taylor Forge

Taylor Forge is a global pressure equipment fabricator, headquartered in Eastern Kansas, providing high quality engineered products to a variety of industries including oil and gas, chemical, power, nuclear, aerospace and defense. In business for over 115 years, Taylor Forge takes pride in its specialized process design, thorough mechanical design and unique fabrication capabilities.

Certifications

ASME U, U2, S and National Board R



Commitment to Quality

In addition to our ASME & National Board Certifications, Taylor Forge – Paola, KS is ISO 9001 Certified.

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