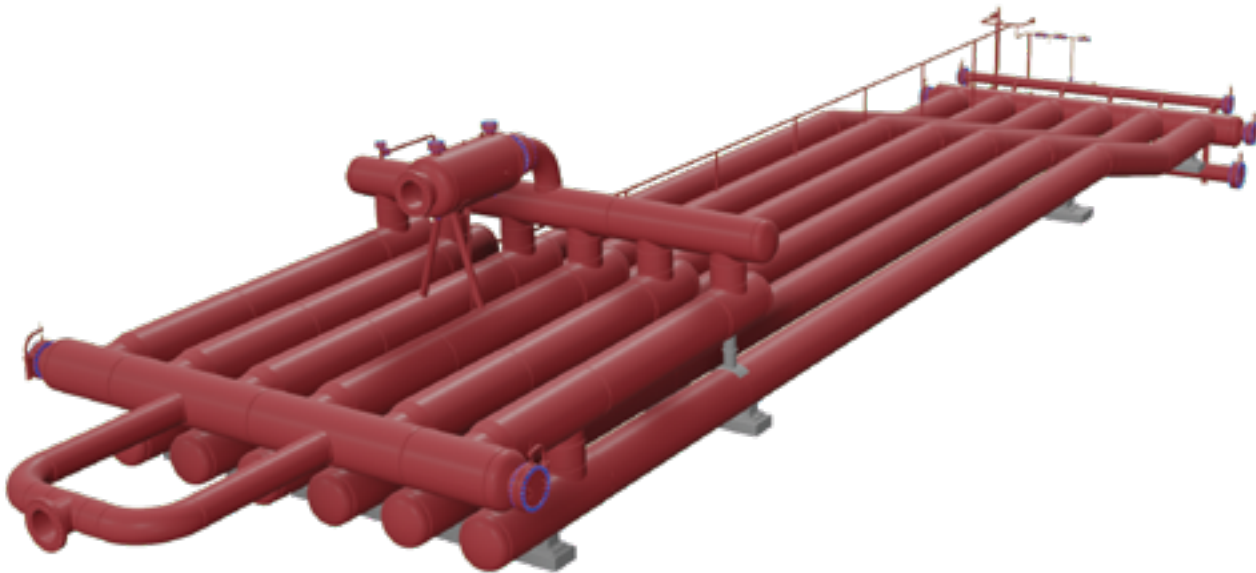


Separation Technology

Engineered solutions for separation and storage of
liquids from natural gas process streams



Experts in Separation

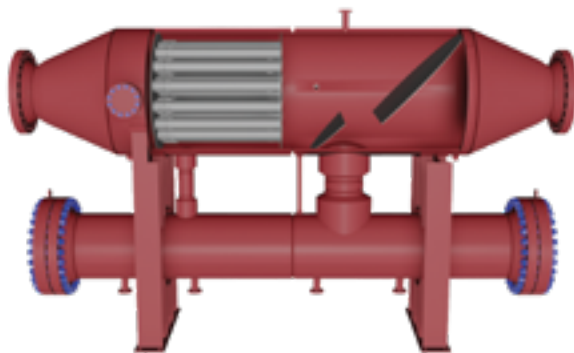
Harp Slug Catcher

Trusted by oil and gas industry leaders for harp style slug catchers, TFES specializes in bulk liquid separation and storage with unmatched liquid droplet removal as low as 100 microns. Utilizing in-house design, fabrication, and testing, TFES is able to handle the most challenging conditions, including 3 phase separation, NACE region 3 sour service, flows of 3 bscfd, and liquid storage of 50,000 bbls. Dating back to the 1970s, the stacked, extruded design reduces the footprint and minimizes site welding via the modular configuration.



Vortex Technology

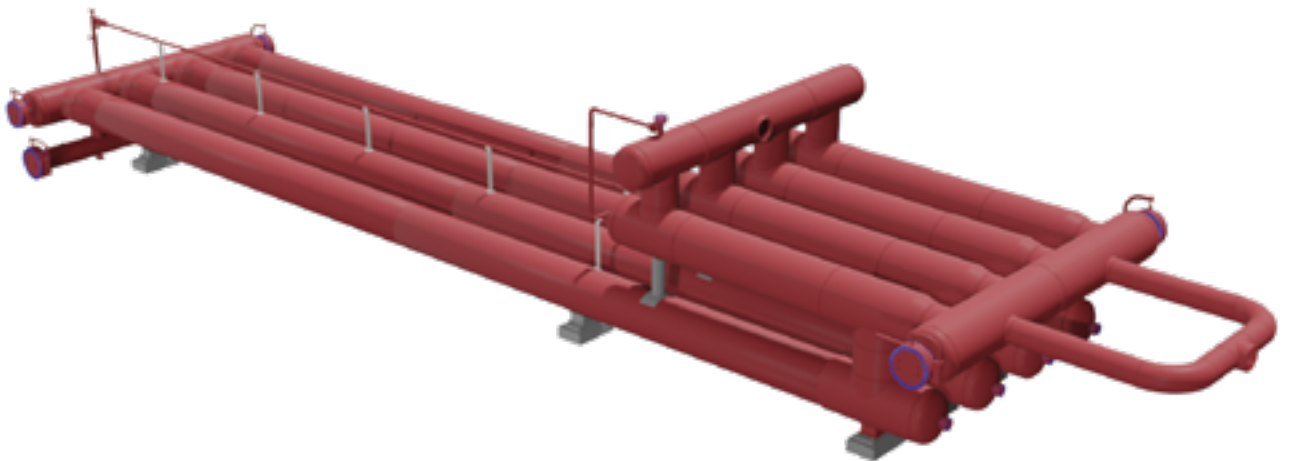
When the application calls for finer micron separation, TFES offers Vortex Separators. Taking advantage of centrifugal force resulting from high velocities, vortex separation provides a more compact, maintenance-free, and highly efficient design. Vortex separators simplify plant design by removing redundant separation equipment. This allows for lower capital and operational cost when compared to conventional separation technologies. Whether the application requires bulk separation and/or fine polishing of the gas stream, TFES employs two unique solutions to handle these needs.



Harp Slug Catcher

Application

- Critical for effective inlet separation
- Adept at separating bulk liquids from high flow process streams to >100 microns
- Categorized as pipeline equipment with design to the pipeline codes: B31.3 or B31.8
- Modular fabrication saves time and budget as compared to pressure vessel solutions



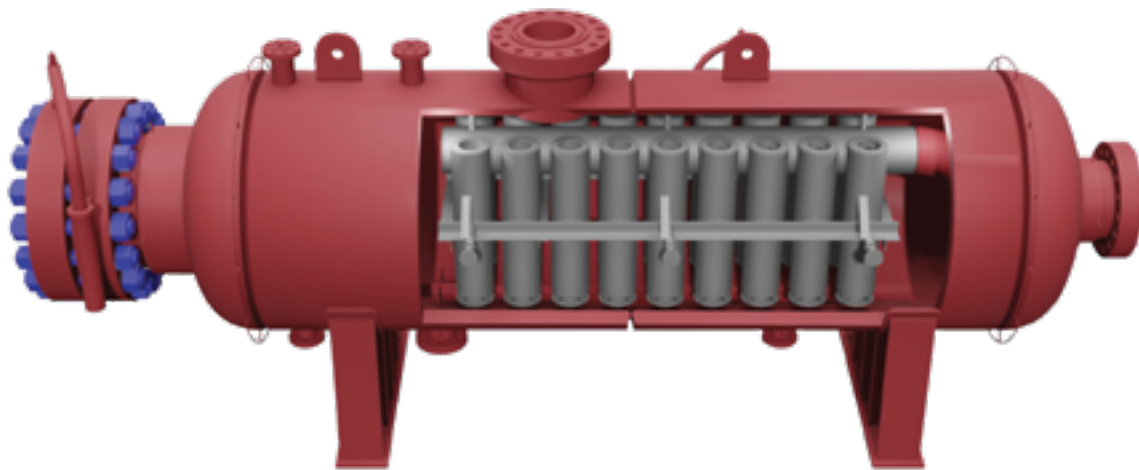
Impact

- Processes 2 or 3 phase flow
- Provides bulk separation and liquid storage
- Efficiently manages high volumes of liquid slugs during full flow pigging operations
- Protects the downstream system and equipment from the damaging effects of slug flow

Vortex Cluster

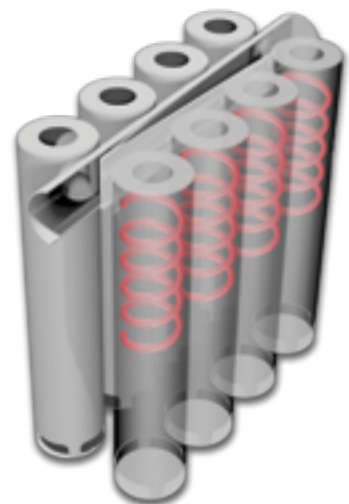
Application

- Processes a wide range of gas-liquid ratios, densities, and viscosities
- Well-suited to handle high liquid loading in process gas streams, including those that have paraffins, waxes, and other solids
- 2, 3, or 4 phase separation
- High g-force inside the cluster promotes destruction of foam into its main components
- Vertical or horizontal vessel configurations
- Cluster internals available for retrofitting existing separator vessels



Impact

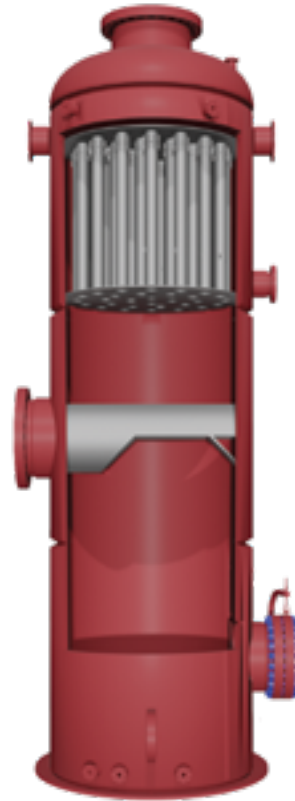
- Reduces size, weight, and cost when compared to other separation technologies
- Eliminates or reduces the need for chemical defoamers
- No moving or consumable parts; little to no maintenance
- Eliminates multistage approach to separation
- Eliminates or reduces liquid carryover and gas carryunder
- Separation efficiency of 99.9% removal of contaminants >1 micron



Vortex Tube

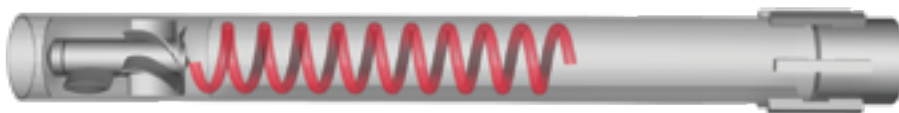
Application

- Ideal for scrubbing small amounts of liquid out of large amounts of gas (2 phase)
- High turndown for variable gas flow rates
- Vertical or horizontal configuration
- Flexible design allows for knockout section for moderate liquid and solid loads
- Integrates with harp type slug catchers for optimized plant inlet separation

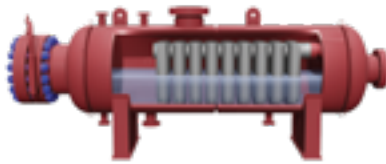


Impact

- Utilizes high velocity to reduce vessel size, weight, and cost when compared to other separation technologies
- Operations friendly - no moving or consumable parts; little to no maintenance
- Outperforms more costly, less efficient vane pack and demister pad configurations
- Extends the life of downstream filter elements
- Separation efficiency of 99.9% removal of contaminants >1 micron



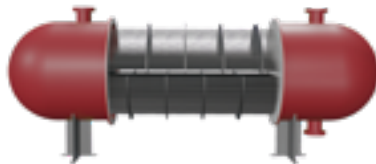
Our Solutions



Vortex Technology



Slug Catchers



Heat Exchangers



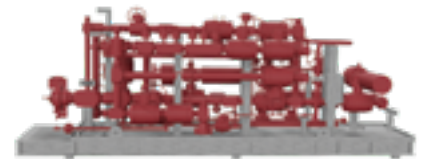
Extrusion



Launchers & Receivers



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