

# Improve Vessel Operator Safety and Reduce Confined Space Entry



**VertexCore™ *Filter Elements***  
for Gas Filtration

**Clark·Reliance®**  
Purity Products Group



## The Problem:

Filter element change outs can be unsafe when operators are forced to reach and/or climb into confined space vessels.



Your filtration vessels may fall under OSHA confined space regulations.

## Observed Change Out Practices



## The Safer Solution: VertexCore™ Filter Elements

VertexCore™ filter elements have a fixed extension that is welded to the element end cap. This allows operators to easily remove and replace elements without exposing their head, shoulders, torso or legs to a confined space.

- Extensions terminate at the vessel opening; allowing easy access.
- Extensions permanently mounted on elements for maximum strength and zero bypass.
- Extensions & hold down rods create barriers that prevent operator entry.



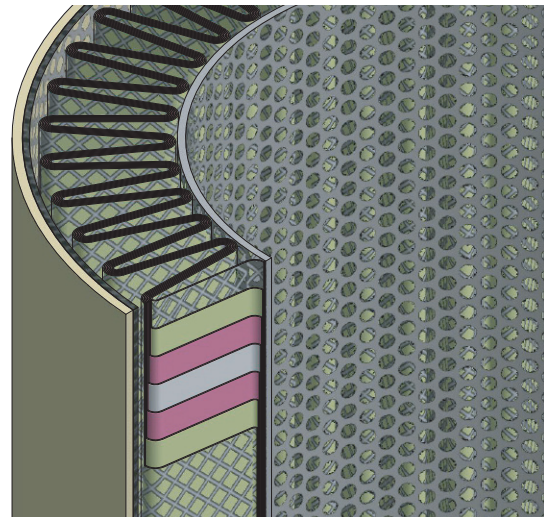
**Patented**

Patent Number 10,258,916

# VertexCore™ Element Advantages

## Advanced Design to Improve Efficiency

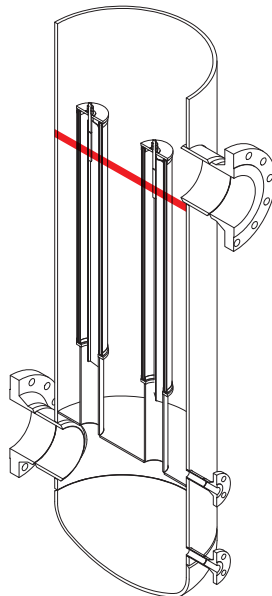
- Multi layer VertexCore elements maximize filter media (versus traditional elements)
- Third party testing confirms increased efficiencies per ANSI/CAGI 400 test standards.
- Removal efficiencies down to 0.3 micron at 99.98% with maximum carryover of 0.1 PPMW.
- Elements designed for critical use applications in the power, oil, and gas industry.



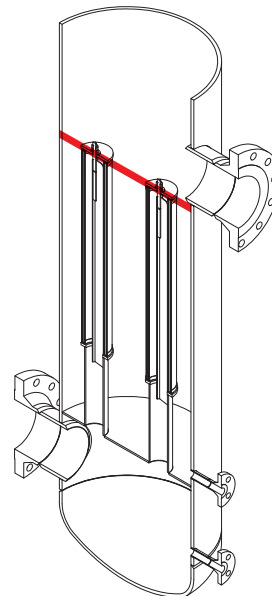
## Reduced Annular Velocities, Increased Removal Efficiency for Solids and Liquids

The enhanced efficiency of the VertexCore elements allows for retrofit in existing vessels to eliminate carryover. VertexCore elements allow for reduced velocity at outlet nozzles with the added benefit of operator safety at change out.

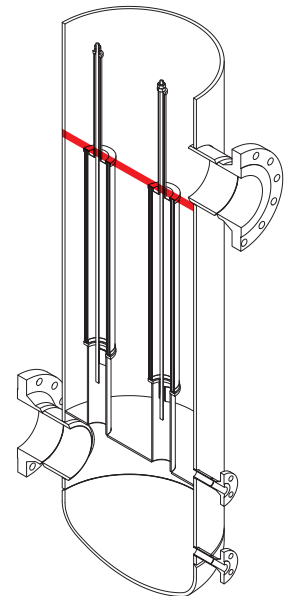
**Maximizing coalescing vessel performance requires controlling the velocities and spacing of the coalescing elements in the pressure vessel. Clark Reliance provides elements with the maximum surface area. By optimizing our filter elements to meet required efficiencies, we increase your system's efficiency. We have an extensive R&D and third party testing program.**



*In an effort to reduce vessel freeboard, some manufacturers will position coalescing elements at or above the vessel outlet. Without adequate spacing, overall vessel efficiency is compromised.*



*When standard coalescing elements are positioned an adequate distance from the vessel outlet, access is difficult. Operators changing coalescing elements must enter the vessel and risk entrapment.*



*VertexCore elements allow the proper placement of coalescing elements in the pressure vessel with the added benefits of increased operator safety.*



# Filtration Innovation from Gas Coalescing & Filtration Experts

VertexCore™ elements are the latest Clark-Reliance development to meet the filtration, separation and coalescing needs of the gas processing industry. Other Clark-Reliance products include:



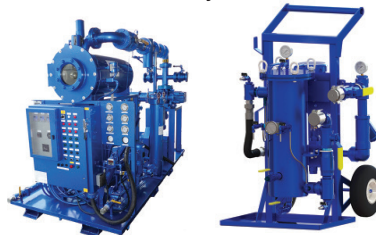
## Anderson® Separator

Anderson Separator manufactures mechanical separators, coalescing separators, and filter separators to remove liquids and solids from gas flows. A fully-integrated designer and fabricator of ASME pressure vessels, Anderson provides quick delivery of standard vessels from stock.



## Oil Filtration Systems® Oil and Fuel Purification

Oil Filtration Systems manufactures purification systems for a wide range of industrial oils and fuels. Its extensive variety of equipment removes contaminants such as water, particulate, entrained gas, varnish and acid from industrial fluids, preventing the unnecessary disposal of millions of gallons of oil and fuel each year.



## National Filtration Systems® Custom Engineered Industrial Filtration and Separation

National Filtration Systems creates engineered process equipment for demanding applications. Working with our customers, we design unique systems and fabricate them as a totally-integrated manufacturer.



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