OsecoElfab

OSECO TOP HAT ASSEMBLY FOR VISCOUS SERVICE

TECHNICAL COMPARISON TO VISCOUS SERVICE HOLDERS

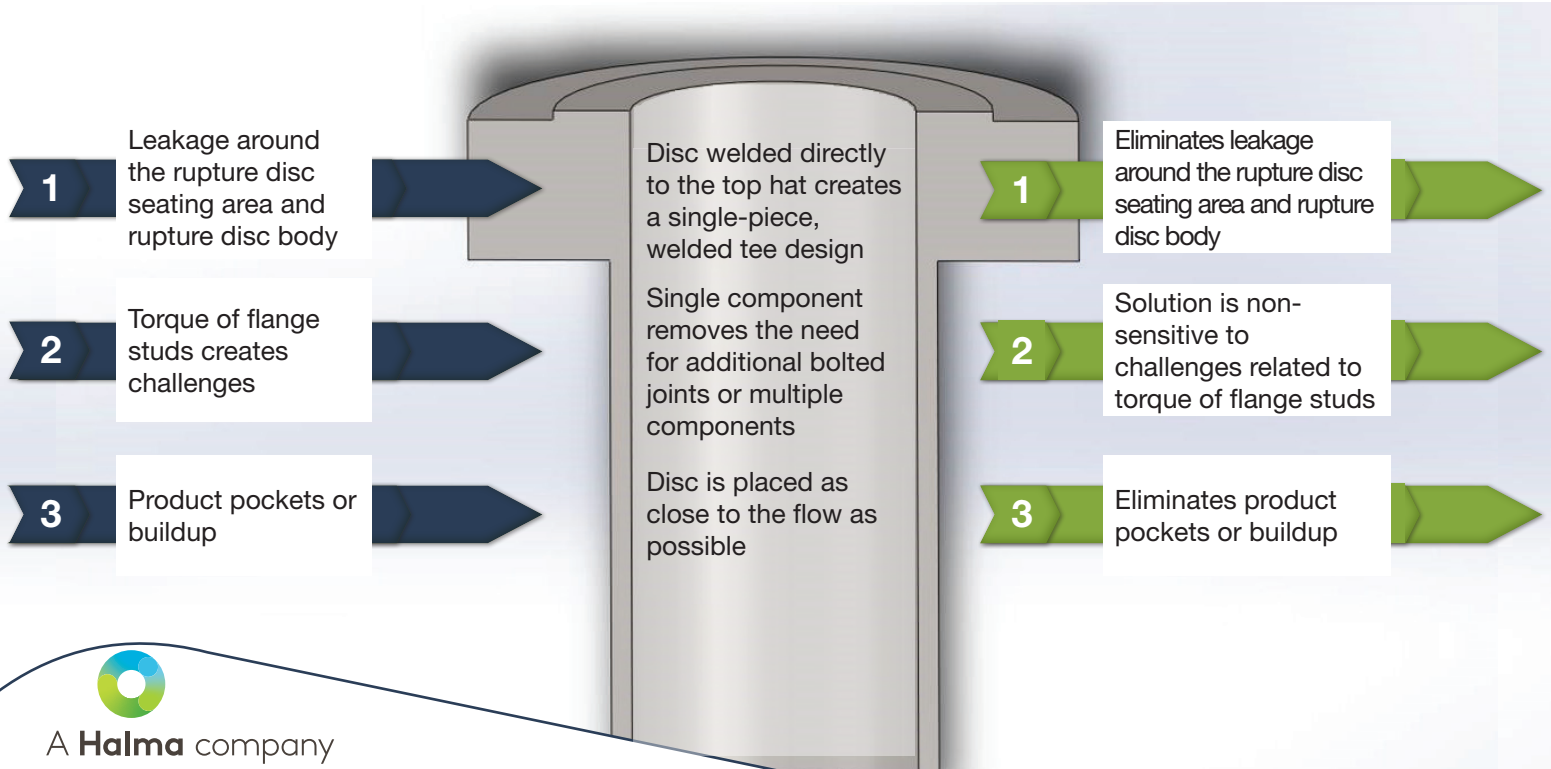
Situation
In viscous service applications where viscous fluids are flowing, product buildup between the process and the rupture disc is a concern. In some cases, this buildup can interfere with the proper operation of the disk during an overpressure event.

Viscous service holders are typically designed with diaphragm valve bodies to allow for the installation of a rupture disk. These valve bodies are machined to divert the flow and "sweep" it past the rupture disc to minimize product buildup. However, the diaphragm valve body design presents a number of challenges. The valve body must have the same size and pressure rating as the rupture disc. If the right valve body is not be available, the only alternative is to custom machine or cast a body to suit a particular application. Additionally, the diaphragm valve body design has many bolted joints, which create additional leak paths for the assembly. The custom machined or cast body is also much more expensive due to the increased amount of raw material and capital cost for tooling up for each configuration.

OsecoElfab was tasked to find a way of overcoming these challenges while still providing a cost-effective solution.

Goals
1. Quantitative: Design an affordable rupture disc assembly for viscous service applications.
2. Quantitative: Reduce the resistance to flow of the viscous service holder.
3. Qualitative: Reduce possible leak paths present in viscous service holders.

Solution
The Oseco Top Hat Assembly has been specifically designed for viscous services where product buildup between the process equipment and the rupture disc is a concern.



A Halma company

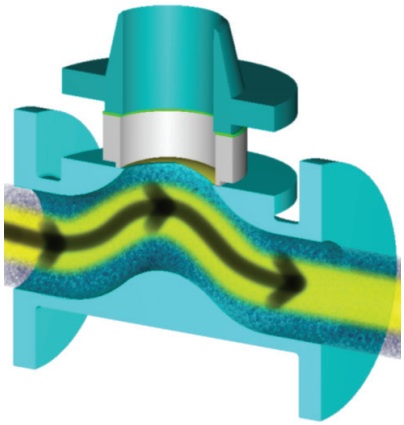
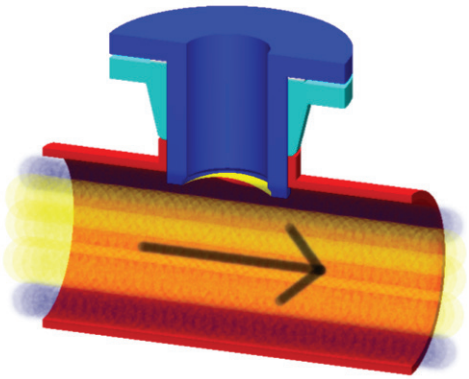
Why OsecoElfab?

The manufacturer chose to work with OsecoElfab because of our ability to offer customized, innovative pressure management solutions at a global level, with a regional focus provided by our local, specialized partners.

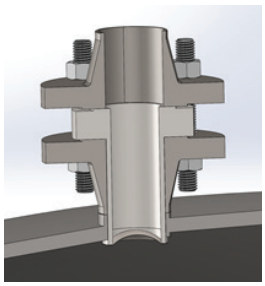
In addition, we offer:

- A comprehensive portfolio of value-based solutions
- Multiple manufacturing locations
- Industry-specific resources
- 24/7 emergency support

Design comparison

Viscous service holder	Top Hat Assembly
	
The geometry of the body creates a higher resistance to flow compared to a straight pipe.	The top hat assembly eliminates the curve in the valve body. This reduces the assembly's resistance to flow while still providing flowing fluid over the rupture disc surface.
Diaphragm valve bodies must be used but they can be expensive and difficult to procure.	Standard piping and flanges replace the diaphragm valve body, making the top hat more affordable to implement.
Multiple components means this assembly can be difficult to maintain and install.	Leakage at the seating area of the rupture disc assembly is eliminated as the disc is welded to the end of the top hat (shown in blue).

Tank Service



Top Hat Assembly in Tank Service

The top hat rupture disc assembly is also suitable for pressure vessels in viscous fluid applications. Here, it can eliminate the blockages that occur with typical rupture disc and valve technology caused by polymerization in the dead head space between the rupture disc and vessel.

Let us help you with all your pressure relief questions.

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