Peerless

A CECO Environmental Brand

skimovex

DEOILING HYDROCYCLONES

PRODUCT APPLICATION

Deoiling Hydrocyclones were developed for the offshore oil industry in the 1980s and rapidly became established as standard equipment used for recovery of oil from Produced Water streams in both onshore and offshore applications.

PROCESS DESCRIPTION

The deoiling hydrocyclone vessel is designed to reduce the oil content of the incoming produced water prior to entering an optional degasser vessel. The hydrocyclone arrangement allows easy access to the liners for inspection, installation and replacement. On entering the cyclone tangentially, the fluid begins to spin. This creates a radial force that directs the heavier phase towards the edges of the cyclone and then out of the cyclone underflow owing to differential pressure. The less dense phase is concentrated in the centre of the cyclone before passing out of the cyclone overflow, again due to differential pressure.

Hydrocyclones are effectively gravity separators that rely on the differential density between the oil droplet and the water to allow separation.

PRODUCT BENEFITS

Deoiler Hydrocyclones offer the following benefits:

+ Compact design, replacing substantially larger equipment.
+ No moving parts and minimal maintenance
+ Ideal for use where space is minimal
+ Outlet oil content reduced to 40ppm in one pass.
+ Available in a rage of alloys from Stainless steel to Super Duplex and Inconels.
+ Hydrocyclone liners can be plugged or un-plugged to adjust vessel flow capacity to suit field conditions over time.

FIELD TRIALS

+ Pilot units available
+ Single liner trials fully scaleable
+ Potable test system

DELIVERING CONFIDENCE IN CLEAN, SAFE AND EFFICIENT TECHNOLOGIES

The separation efficiency is governed by five main factors:

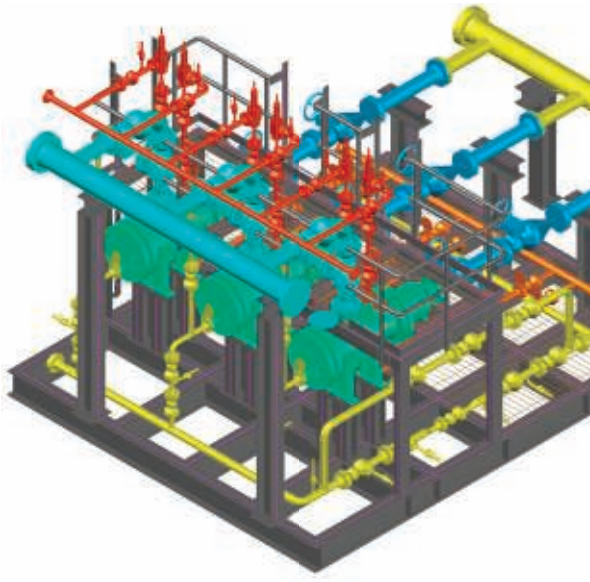
1) Droplet/Particle Size - according to Stokes' Law this is the biggest factor that affects gravity based separation. A hydrocyclone is ultimately a proportional separator. Any single type of hydrocyclone will separate a given percentage of oil droplets of a certain size for a given set of process parameters. This is the profile of the hydrocyclone. It is thus essential at all times to minimise any possible causes for droplet shear.

2) Differential Density - two different products will only separate due to gravity (or other forces) if there is a difference in density. The greater this difference the easier it is to separate them.

3) Viscosity of the bulk fluid - a lower viscosity will result in easier separation.

4) Gravity (or centrifugal force) - the hydrocyclone liner has a tangential inlet which creates a swirl within its core. This high velocity swirl action imparts massive centrifugal forces to separate the oil from the water, sending the two fluids to their respective discharge ports. By utilising centrifugal pressure as the means of separation, the hydrocyclone achieves performance with a lower residence time than traditional gravity separators.

5) Distance - the reject from the hydrocyclone comes out in a counter current flow as a reverse spinning vortex. For an oil droplet to be removed it must make its way from the bulk fluid into the central core. The less distance the droplet has to travel to get to this central core the higher the efficiency.



SERVICE AND FEATURES

+ Supply of complete skid mounted equipment.
+ Focus on performance guarantee, available plot space and ease of maintenance.
+ Trouble shooting and Debottlenecking of existing plants.
+ Fast track deliveries.
+ CFD modelling and application verification
+ Installation and Supervision Commissioning

Visit our website or contact one of our local technical sales staff to see the full range of Peerless oil and gas processing technologies and how they can can be combined to meet your complete processing needs.

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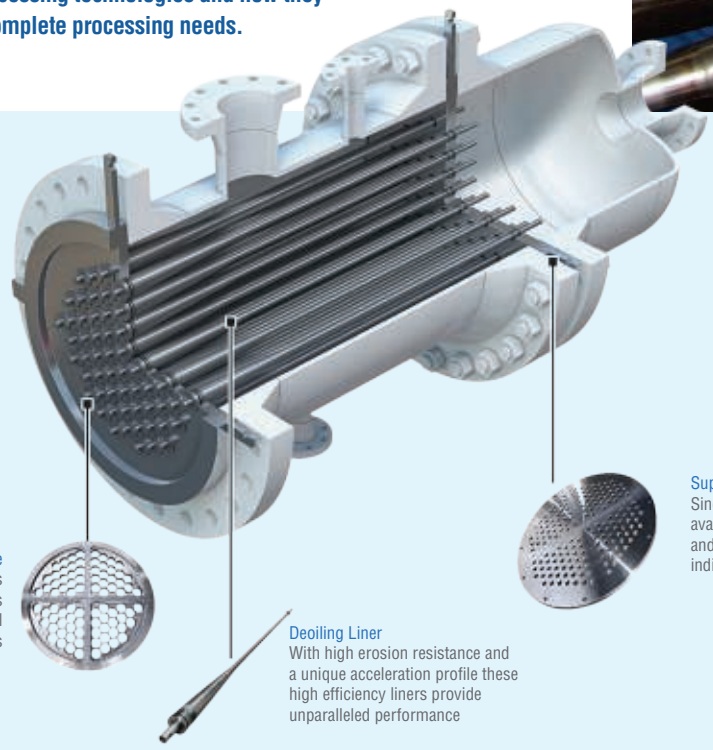

Reject Plate
Single or split section designs available in a variety of materials and thickness to support individual applications

Deoiling Liner
With high erosion resistance and a unique acceleration profile these high efficiency liners provide unparalleled performance

Support Plate
Single or split section designs available in a variety of materials and thicknesses to support individual applications

For more information visit our website at

www.cecoenviro.com/peerless