

KOCKEN

SISTEMAS DE ENERGIA INC.

S-CONE[®] – VORTEX SEPARATION



It is very well known that the patented vortex separation technology is an extremely efficient centrifugal inlet device capable of solving many operational problems encountered where there is high liquid loading in the gas phase of the feed. Kocken Sistemas de Energía Inc has refined and improved this technology and introduces the S-Cone[®] (patent pending).

The vertical tubes have been replaced with conical cylinders to emulate the shape of the vortex thereby creating a stronger and more defined vortex. The inlet feed is introduced to a manifold where the velocity is increased. The S-Cone[®] then employs centrifugal force to create a gas-liquid vortex wherein liquids are spun to the outer extremes of the cones and gas passes up through the vortex. Depending on the application, the gravitational vector is multiplied by 100 to 225 times to create the centrifugal force and amplify the differences of the densities of the gas, liquid and possibly solid phases. Various design criteria are considered depending on the application (foam disruption, 2-phase gas/liquid separation, 3-phase gas/liquid/liquid separation or 4-phase gas/liquid/liquid/solid separation).

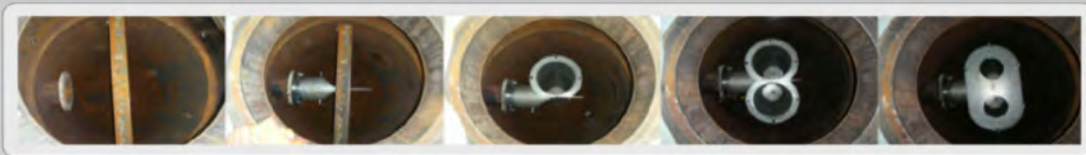
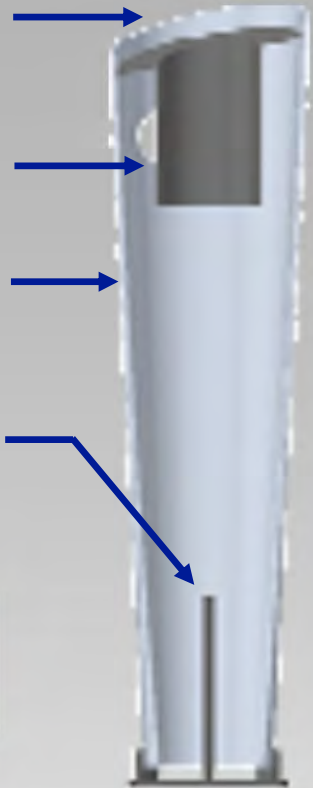


The top of S-Cone® and the orifice tube are chamfered to create a better flow pattern and reduce turbulence in the gas space of the separator to aid in final separation of the light liquid and gas phase prior to exiting the separator.

A vortex perpetuator physically forces the vortex to occur, pushes the liquid down the cone, and ensures that liquid cannot blow through the gas orifice.

The conical tubes aid in defining the vortex. Various variables employed in the design of Hydrocyclones have been adapted to enhance separation of the liquid phases.

A simple, yet effective, vortex finder is added to ensure that the vortex does not wander. This ensures that the vortex remains centered on the target plate and prevents gas blowout through the liquid phase in upset conditions.



DESIGN PARAMETERS

Operating Pressure	
Operating Temperature	
Flow of Gas	
Gas Molecular Weight	
Flow of Heavy Liquid	
Specific Gravity of Heavy Liquid	
Flow of Light Liquid	
Specific Gravity of Light Liquid	
Presence of Solids	
2, 3, or 4-Phase Separation	

APPLYING WORLD CLASS TECHNOLOGIES IN PURSUIT OF SUPERIOR EFFICIENCY

3700 - 400 3RD Ave. S.W.
Calgary, AB Canada T2P 4H2
Tel: + 780 468 5007

info@kockenenergia.com

Bldv. Adolfo Ruiz Cortines No. 444-B
Entre Calle 5 y 7, Fracc. Costa Verde,
Boca del Rio, Veracruz CP 94294 México
Tel + 52 22 99 25 40 13
preguntas@kockenenergia.com

Pine Grove Centre
305 Highway 10, PO Box 60
Bridgewater, NS Canada B4V 2W6
Tel: + 902 527 2000
info@kockenenergia.com

