



MED MODEL KLS



**Mueller
Environmental
Designs, Inc.**



**Air Filtration
Evaporative Cooling
Noise Control
Mist Elimination
Turnkey Projects**



Principle of Operation

The Mueller Environmental Designs pipeline suction sludge scrubber separation system employs a gas separator with on line cleaning capabilities, blowdown separator/storage tank and blowdown separator/silencer

The MED Model 119 KLS-2 horizontal pipeline suction scrubber is designed to remove entrained lubricating oils, condensation, water, solids and other sludge like liquids from flowing gas. The unit is designed to handle 150 - 350 MMSCFD operating at 350 to 750 PSIG and 60° F.

Its principle of operation is simple and has no moving parts. As natural gas and entrained particulate enter the vessel, flow impinges on two stages of separation eliminating solids and liquids from the gas stream.

Initial Separation

Initial separation occurs when gas flow and entrained particulate first enter the vessel; gas velocity reduces, allowing particulate to impinge and agglomerate on vessel internals, dropping out of the gas stream, becoming trapped in the first chamber sump. As particulate accumulates in the sump and reaches dump level, they are pneumatically transferred by blowdown gas to the atmosphere through the blowdown separator/storage tank and eventually to the blowdown separator/silencer.

Primary Separation

Primary separation takes place after gas flow and small particulate transit initial separation. As flow advances to the primary separation area, gas velocity increases along with entrained particulate and enters an array of multiple helical coil separators arranged in a 7 wide by 17 long assembly. Each separator module is made up of a separator element, re-entrainment cone, outlet tube with weir and body tube.

As flow enters the helical coil separator, particulate is separated from the gas stream and becomes trapped in the primary separation sump. As particulate accumulates in the sump and reaches dump level, they are pneumatically transferred by blowdown gas to the atmosphere through the blowdown separator/storage tank and eventually to the blowdown separator/silencer.

Clean gas exits the helical coil separator through outlet tube into the clean gas chamber and leaves the vessel.

On Line Cleaning Capabilities

The horizontal pipeline suction scrubber has on line cleaning capabilities. Over time, built up sludge and particulate could prevent or reduce the ability of venting gas to pneumatically transfer separated detritus to the blowdown separator/storage tank and separator/silencer. Accordingly, sludge cleaning fluid headers are strategically placed inside the vessel at positions to maximize cleaning solution dispersion and sludge contact. Cleaning solution is injected by high pressure pumps through 1" connections on the vessel to the sludge cleaning headers. When cleaning fluid has dislodged the built up sludge and particulate, cleaning solution and particulate is pneumatically transferred by blowdown gas to the atmosphere through the blowdown separator/storage tank and eventually to the blowdown separator/silencer.

Blowdown Separator/Storage Tank

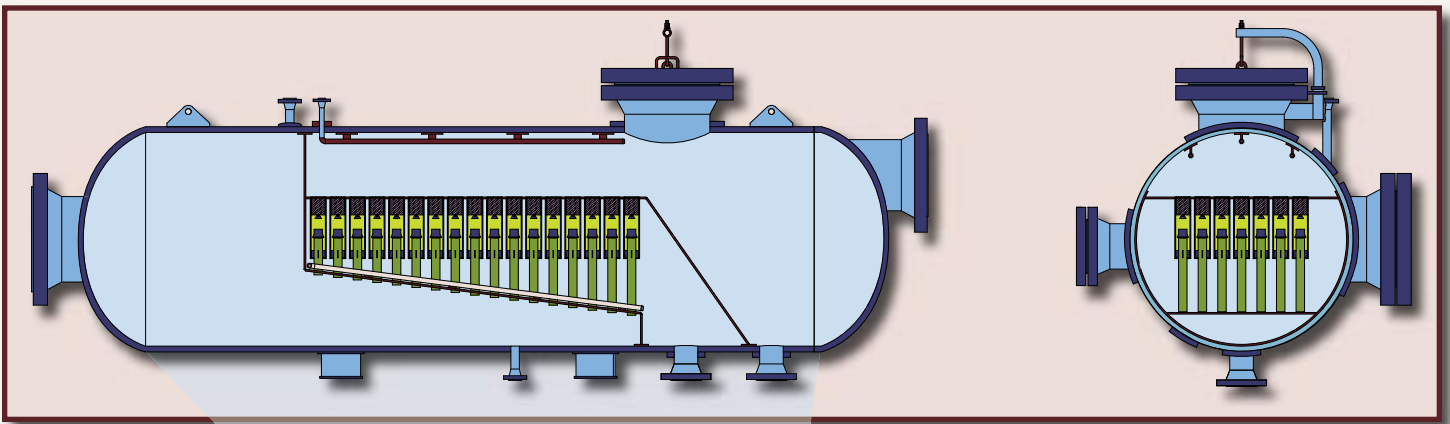
When particulate accumulates in either the first chamber sump or primary separator sump and reaches dump level, it pneumatically transfers by blowdown gas, to the blowdown separator/storage tank. The blowdown separator/storage tank uses an inertial separator element to separate, collect and store accumulated particulate and allow the venting gas to release to the blowdown separator silencer.

A siphon drain is provided for particulate removal by vacuum truck. A sight gauge is used to verify liquid level holding height.

Blowdown Separator/Silencer

When venting gas is released from the blowdown separator/storage tank, a small amount of liquid particles are also pneumatically transferred with it. The blowdown separator/silencer uses a centrifugal separator element with side wall traps to separate, collect and store accumulated liquid particulate and allow the venting gas to escape to atmosphere. The blowdown separator/silencer will also reduce the noise associated with the venting gas.

Pipeline Suction Sludge Scrubber



**Pipeline Suction Sludge Scrubber
MED Model 119 KLS-2**

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