

Liquid Seal



Description

Purge systems are the perfect solution for preventing air infiltration in the flare stack and header system; however it is possible to lose purge gas supply. When purge gas is lost or interrupted, the flare system and plant can once again face the possibility of flashback and/or catastrophic explosion.

The liquid seal drum is a specially designed vessel containing a predetermined level of water in the base of the drum. As the waste/process gas enters the drum through the flare system header, it is diverted down into the water and forced to bubble through the liquid seal. The gas then travels up through the flare stack and tip for combustion.

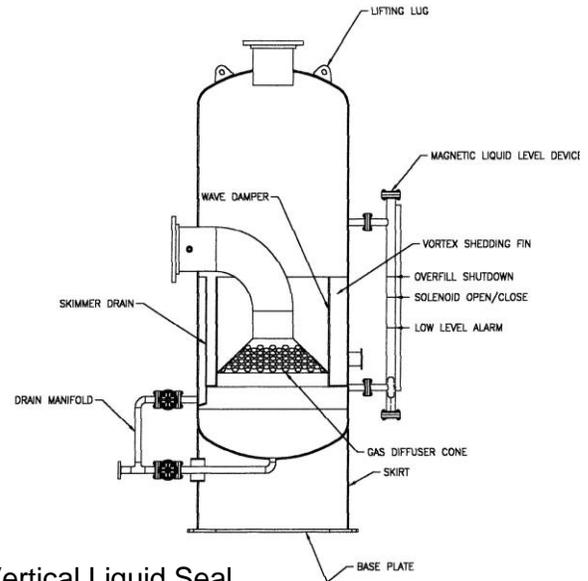
The main purpose of the liquid seal drum is to stop flame propagation. By quenching the flame with a barrier of water, AEREON's Liquid Seal design achieves this purpose as well as providing other intrinsic design advantages. Second, the liquid seal acts as a large check valve so that gas cannot travel upstream for any reason. A third function of the liquid seal is to disentrain liquid droplets. Thus, the liquid seal drum provides flame arresting capabilities, acts as a check valve, and knocks liquids out of the waste gas. Liquid seals can be designed as a separate vessel or as an integral part of the flare riser structure.

Advantages

- Prevents flashback (gas groups A-D)
- Prevents surging of gases
- Creates positive pressure in the flare header
- Disentrains liquid droplets

Principal Applications

- Process gases containing air
- Process gases in gas groups A and B
- Process gases with high probability of flashing back
- Terminal loading facilities
- Refineries
- Petrochemical facilities



Vertical Liquid Seal

Dimensions

DIAMETER

24" to 180"

HEIGHT

5' to 50'

WALL THICKNESS

Varies

MATERIALS

Carbon steel, stainless steel, others

ASME CODE DESIGN

By customer request

ORIENTATION

Vertical or horizontal

SYSTEM INTEGRATION

Stand alone or integral to stack

Design Features

- Anti-surge baffles
- Perforated diffuser cone
- Automatic liquid level controls
- Hydrocarbon skimmer
- Inspection opening
- Drain
- Used in combination with knockout drum