

DID YOU KNOW?

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SIHI LIQUID RING VACUUM PUMPS PART I - HOW DO THEY WORK?

SIHI LEM Series vacuum pumps are utilized for pulling vacuum during the sterilization process. This simplistic design offers cavitation protection, continuous solids purging, and vacuum levels at or below 28 in-Hg vacuum in a close-coupled, compact design requiring minimum space.

The “liquid ring” pump takes its name from its principle of operation. A cool liquid (water < 70°F) is introduced into a round casing. Due to the centrifugal force created when rotated, the water forms a concentric ring around the pump casing. (See blue area in Figure 1.)

The impeller is eccentrically mounted (or off center) in the casing. Hence, on the left side, the cells formed by the impeller blades and the boundary of the liquid ring increase in size (which creates suction or vacuum). The cells on the right side decrease in size (creating discharge or compression) as the impeller rotates counterclockwise.

A suction port is positioned in the area where the cell size is increasing (see yellow area on left side in Figure 1). This port ducts the gas from the pump inlet into the left side lower pressure cells of the impeller. The gas introduced into these cells is then compressed by the operating liquid ring of water in the right side where the cells are decreasing. A discharge port then ducts the compressed gas/air to the pump discharge port.

Since the seal liquid (water) absorbs the heat generated from compression, a small quantity of fresh cooling water is continually introduced via the seal liquid supply port. The resulting excess warm water discharges with the gas to drain. The water used as a seal liquid allows the liquid ring vacuum pump to perform cool, reliable compression of virtually all gases and condensable vapors while easily handling water, other liquids, and soft solid carryover.

These SIHI close-coupled liquid ring vacuum pumps offer a reliable and robust simplistic design to provide many years of trouble-free vacuum service.

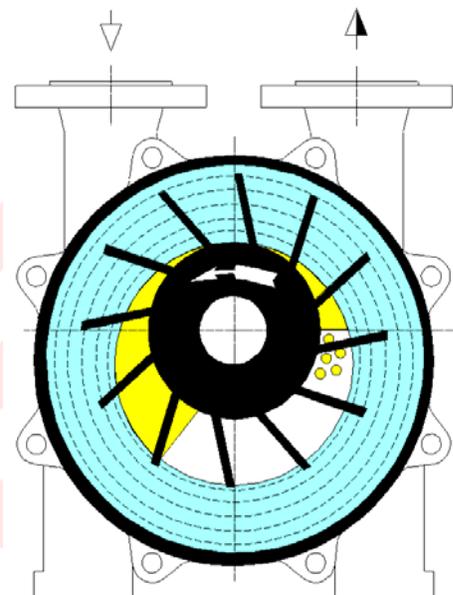


FIGURE 1



PRIMUS

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