



★ The illustration is intended to depict the operating principle of the Sterling SIHI liquid ring pump only and should not be considered for engineering details of construction.

- = Gas Mixture
- = Service Liquid
- = Gas & Liquid

### \* **Single Acting**

In a round pump body (A), a shaft mounted impeller (B) is positioned at a point eccentric to the centerline of the pump body. The centrifugal action of the rotating impeller forces the service liquid introduced via channel (D) towards the periphery of the pump body forming the liquid ring (C).

When pumping action is achieved, the gas mixture being handled is introduced to the impeller through the suction port (H), in the intermediate plate (E), causing a vacuum at the pump suction.

The gas mixture fills the impeller cavity between the inside diameter of the liquid ring and the root of the impeller blade. As the impeller rotates, the impeller blade immersion in the liquid ring increases reducing the volume between the liquid ring and the root of the impeller blade. The result is the compression of the gas mixture until it reaches the discharge port (J), located in the intermediate plate (K). The gas mixture exits through the discharge port.

During the compression cycle heat is being imparted to the liquid ring. In order to maintain a temperature below the vapor point of the service liquid, cooling must be applied. Cooling is achieved by continuously adding a cool supply of service liquid to the liquid ring. The amount of service liquid added is equal to that discharged through the discharge port (J) together with the compressed gas mixture. The gas mixture and service liquid is eventually passed through the pump discharge for separation.