

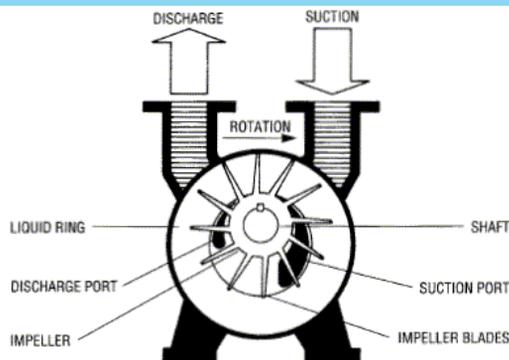


# AIRVAC INDUSTRIES PVT. LTD. ROTARY LOBE(ROOT) BLOWER

## Water Ring vacuum Pumps :

Water Ring vacuum Pumps are used to achieve high vacuum, this machine can also used as compressor for special duty conditions. Simple and trouble free operation is the main advantage of this machine and it can handle dust laden gases, moist air, aggressive gases and vapors. The material of construction should be properly selected considering the aggressiveness of media. Water Ring Vacuum pumps are 100% oil free and hence they do not contaminate the media passing through it. The ring liquid which acts as seal, absorbs most of the heat generated during compression.

## Principle :



The water ring vacuum pump features a cylinder which has a central hub that is slightly offset to one side. The central hub has an impeller which has slightly curved blades. The blades are fixed such that those at the top of impeller are closer to the outside wall and those at the bottom of the pump are fixed far from the wall. Two port plates with holes or ports are fixed at the two ends of the impeller. In water ring vacuum pump water is used as the sealant. Before switching on the pump the impeller blades remain immersed in water as the pump is partially filled with water.

When the vacuum pump is switched on the impeller rotates and throws the water towards the outer walls of cylinder like a sling owing to the centrifugal force creating a ring of water. As the impeller is offset to one side, some blades remain immersed in water and some are exposed. This produces an empty space or void lying between the blades and the water creating “an impeller cell.”

With continued rotation of impeller the water recedes from the hub and acts like a piston to create an even larger cell. A suction force is produced and the pump draws in air, gas or vapor through the suction port on the side. When impeller cell passes the suction port and moves towards discharge port a compression force is produced. When the impeller cell passes the discharge port compression is maximum, which throws out or expels the air or gases. Since the water is turbulent some of it also gets discharged. This continuous action creates a vacuum.