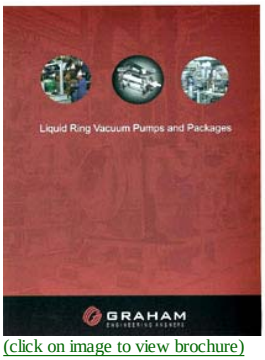
Liquid Ring Vacuum Pump

Product Overview



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Graham's single and two-stage vacuum pumps are designed to be rugged and simple to operate. You have a wide choice of materials to match your processes. Standard pumps are available in cast iron, steel or stainless steel; while our COR-RESIST series is available in nickel, aluminum bronze, Hastelloy, alloy 20, ni-resist, titanium, duplex stainless steel, as well as other alloys.

These versatile workhorses are designed to excel in many processes, particularly those where condensible vapor is present. Graham vacuum systems can include both liquid ring vacuum pumps and steam jet ejectors for a highly efficient vacuum system that optimizes capital and operating costs.

Principle of operation

What makes our liquid ring vacuum pumps so efficient and easy to maintain is the fact that there is only one rotating part, a multi-bladed impeller keyed to the pump shaft. The impeller is mounted eccentrically in a round pump housing. As the impeller rotates, centrifugal force throws the seal liquid against the outside wall forming a liquid ring.

The space between each pair of impeller blades, known as the cell, can be thought of as a piston in a cylinder. As the impeller rotates, starting at the top, the volume in each piston cell increases. As the cell passes the inlet port, gas is drawn in. Just past the inlet port, the cell has reached its maximum volume. This is the bottom of the vacuum pump.

As the cell rotates toward the top of the housing, the volume available for gas in the cell decreases, causing the gas to be compressed. This is similar to the exhaust stroke of a piston.

The cell then passes the outlet port and the gas is discharged. This "rotating piston effect" produces a constant, non-pulsating gas flow.

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