

TITAN HIGH EFFICIENCY VS. CONVENTIONAL SINGLE-STAGE AND TWO-STAGE PUMPS

For many years, liquid ring pump manufacturers offered single-stage pumps that were suitable for vacuum levels up to 24" HgV, and two-stage pumps for operation at 24" HgV and higher.

Although a conventional single-stage pump design operates well in the 0 - 20" HgV range, at deeper vacuum levels over 20" HgV the capacity reduces drastically.

The two-stage design operates well at vacuum levels from 24" HgV to 29" HgV, but not in the lower vacuum range below 24" HgV due to the over-compression between the first and second stage. This results in low efficiency, reduced flow, and high power consumption in the range below 24" HgV. The advantage of the two-stage design is in applications where the vacuum level is constant and relatively deep (greater than 25" HgV). At constant deep-vacuum levels, the two-stage pump will operate more efficiently.

The introduction of the high-efficiency, single-stage liquid ring design allows for operation over the full vacuum range from 0" HgV to 29" HgV. The variable discharge port design enables the pump to operate at optimum efficiency at each point of the curve over the full vacuum range. This design feature makes these pumps much more suitable for operation in applications where the vacuum level varies greatly.

The advanced impeller design and hydraulics of these pumps ensures a higher energy transfer to the liquid ring, requiring less liquid flow. This results in superior performance over the full vacuum range.

The single-stage design results in a more compact and stronger unit than the two-stage unit due to the reduced bearing span. The high-efficiency, single-stage design also reduces the number of paper gaskets between the casing elements because it uses Loctite gasket eliminator instead of paper gaskets.

The port plate in the TiTan high-efficiency, single-stage pump is interchangeable, allowing substantial savings if the port plates require replacement due to wear from erosion or corrosion.

The TiTan high-efficiency, design, single-stage, compared to a two-stage pump features fewer parts, reduction of gaskets and ease of maintenance / repair.

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