



## Condenser Holding

REDUCE MAIN TURBINE BACK PRESSURE:



Condenser exhauster two-stage liquid ring systems

- Efficient two-stage design provides excellent performance and condensing capabilities at high vacuum.
- Heavy-duty system design, featuring stainless steel impellers, requires a minimum of maintenance.
- Superior evacuation (hogging) characteristics versus steam ejectors.
- Complete package design includes all necessary components for automatic operation.
- Stainless steel plate type heat exchanger offers superior heat transfer.
- Features mechanical shaft seals as standard (minimizes air leakage and shaft damage).
- Heat exchanger is expandable for customized conditions; shell and tube available upon request.

### Performance characteristics condenser exhauster systems

Two-stage condenser exhauster design	Holding* capacity (SCFM at 1" HgA)	Pump speed (RPM)	Motor (HP)
DVW0706D	5	1050	50
DVW1006D	10	880	100
DVW2006D	22.5	640	200
DVW3006D	27.5	500	250

\*Note: Based on 55°F cooling water to heat exchanger.

Improve your condenser vacuum by a half-inch of mercury (0.5" HgA) and see what it could save.

Each plant has different operation characteristics, but calculating your potential savings is simple.

1. In your "Turbine Data File" locate a graph or table that shows Turbine Efficiency Improvement as a function of turbine back pressure (condenser absolute pressure). One example indicated a **0.3%** improvement if the back pressure was dropped from 2.5" HgA to 2.0" HgA.
2. Determine the Turbine Heat Rate, which is the BTU input to the turbine required to produce a kilowatt of electricity. A typical value is about **8,500 BTU/kW**.
3. Determine the cost of the fuel. A recent spot price (January 2015) for natural gas was **\$3.00 per million BTU's**.

Use the following calculation:

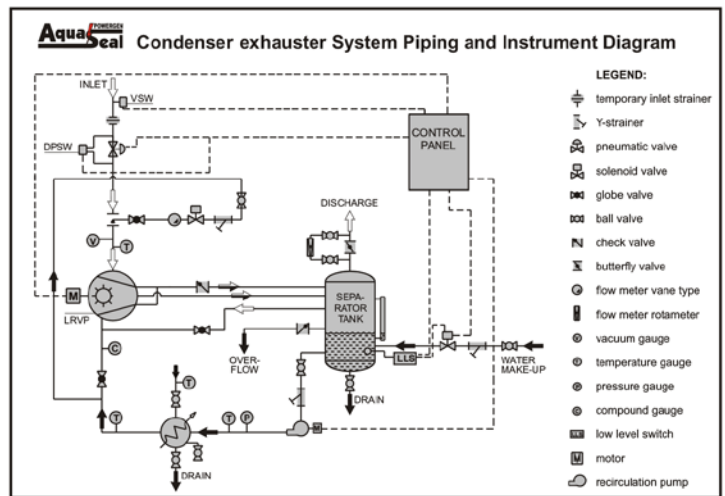
$$[0.003] [8,500 \text{ BTU} / \text{kW-hr}] [\$3.00 / 10^6 \text{ BTU}] = 7.65 \times 10^{-5} \$ / \text{kW}$$

This appears to be insignificant until we factor in the amount of power produced over an entire year. If the plant is rated at **500 megawatts (500,000 kW)** and it operates **8000 hour per year**:

$$[7.65 \times 10^{-5} \$ / \text{kW}] [5 \times 10^5 \text{ kW}] [8 \times 10^3 \text{ hr}] = \$306,000 \text{ per year}^*$$

Now that's a figure worth considering. A fraction of this will purchase a condenser exhauster system. \*All of this, however, depends on the conditions at your particular plant. Use the above formula to calculate your own potential savings.

Call us as 1-888-925-5444 or email us at sales@dekkervacuum.com.





## Condenser Hogging

TO IMPROVE CONDENSER EVACUATION TIME:

### MAXIMA-K™

Large capacity single-stage liquid ring vacuum pumps

- Superior evacuation (hogging) characteristics versus steam ejectors, capable of high vacuum, down to 1" HgA.
- Reliable heavy-duty design, built to rigid quality standards.
- Variable discharge port enables pumps to operate at maximum efficiency over the entire vacuum range.
- Shaft sleeves are standard, virtually eliminating the possibility of shaft wear.
- The pump can handle large amounts of condensable vapors which enhances the performance significantly.
- Low operating speeds ensure an extended life cycle.
- Heavy-duty bearings mounted external to the pumping chamber, eliminating potential bearing failure due to process contamination.

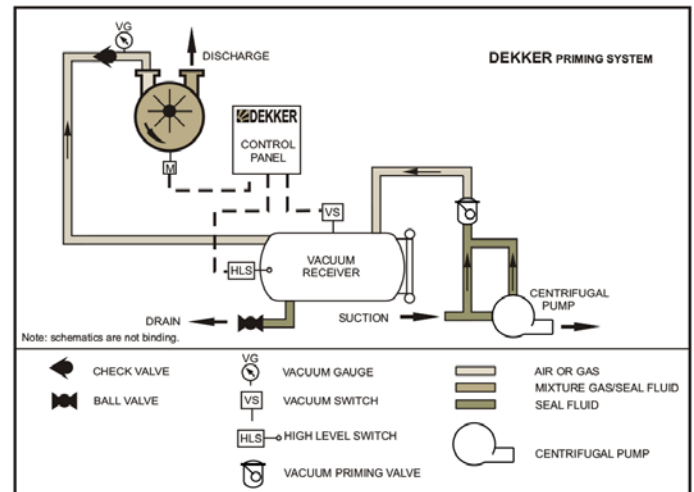
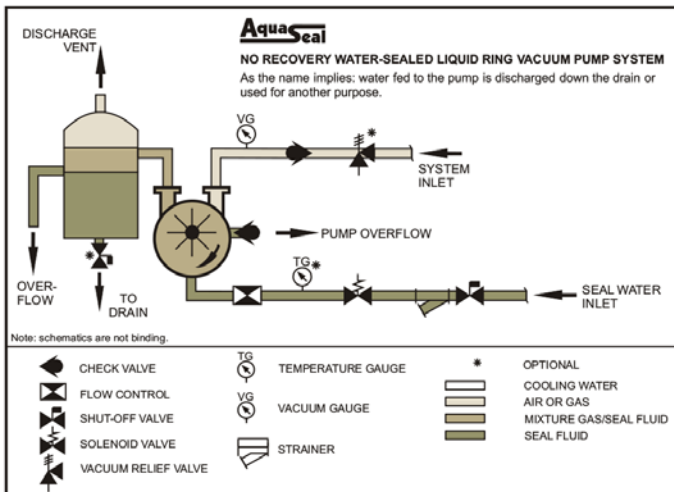
## Waterbox Priming

FOR RELIABLE CONDENSER WATER BOX AND CENTRIFUGAL PUMP PRIMING:

### TITAN™

High-efficiency liquid ring vacuum pumps

- Ensure efficient operation of the condenser with the use of the DEKKER vacuum priming system.
- Complete package design includes all necessary components for automatic operation.
- Designed for heavy-duty applications with virtually no maintenance required.
- Heavy-duty bearings mounted external to the pumping chamber.
- Capable of handling saturated gas mixtures and small amounts of liquids.
- Features single face mechanical seals as standard.
- Pumps are available in different materials to suit your application.



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### GOLD STANDARD SUPPORT

Your Knowledge-Backed Guarantee. Need help sizing a vacuum pump? Having application problems? With over 100 years of combined experience, we've made it our business to know your needs as well as our systems capabilities. With DEKKER, you get a team of vacuum experts dedicated to helping you resolve system challenges, streamline processes, and optimize results.

Maintenance, service and repair so you keep operating at maximum efficiency.



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