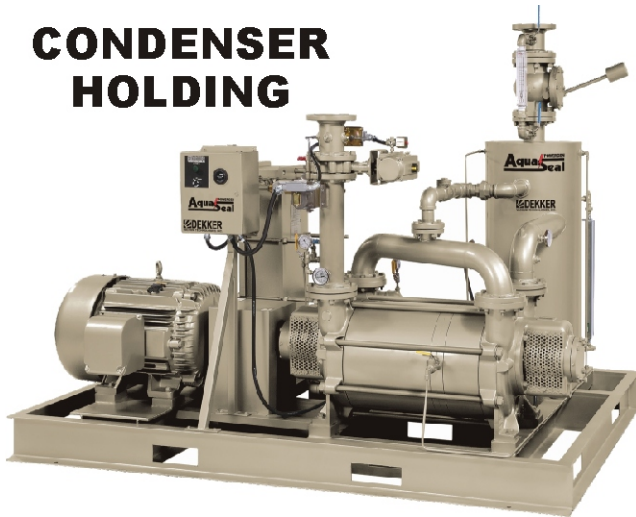


**RELIABLE, EFFICIENT VACUUM PUMP SYSTEMS FOR THE POWER INDUSTRY**

## 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)
DVW0750D	9	900	50
DVW0950D	11	900	60
DVW1200D	16	720	100
DVW1600D	22	720	100
DVW2000D	25	720	125

\*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 operating characteristics, but calculating the answer is simply a matter of gathering some data and multiplying.

1. In your "Turbine Data File" there should be a graph or table that shows Turbine Efficiency Improvement as a function of turbine back pressure [condenser absolute pressure]. We recently saw one that indicated a **0.3%** improvement if the back pressure were 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 **8500Btu/kW**.
3. Determine the cost of fuel. A recent spot price for natural gas was **\$ 7.00 per million Btu's**.

Use the following calculation:

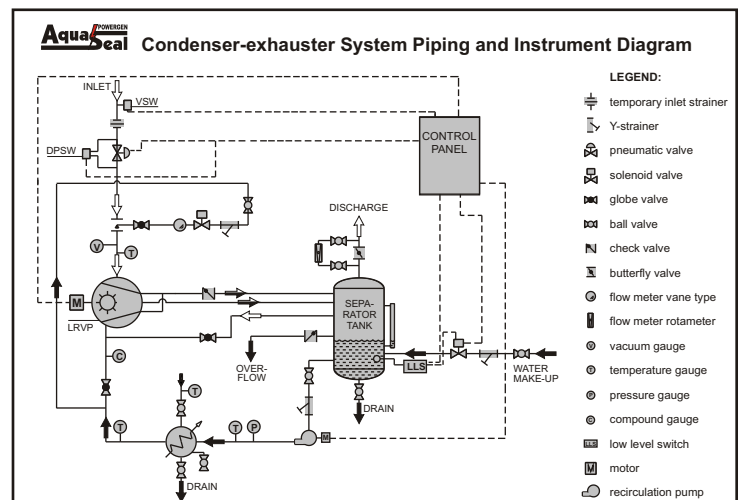
$$[0.003] [8500 \text{ Btu} / \text{kW-hr}] [\$7.00 / 10^6 \text{ Btu}] = 1.8 \times 10^{-4} \$ / \text{kW}$$

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 hours per year**:

$$[1.8 \times 10^{-4} \$ / \text{kW}] [5 \times 10^5 \text{ kW}] [8 \times 10^3 \text{ hr}] = \$ 714,000 \text{ per year}^*$$

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 at 1-888-925-5444 or e-mail us at [sales@dekkervacuum.com](mailto:sales@dekkervacuum.com)



### RELIABLE, EFFICIENT VACUUM PUMP SYSTEMS FOR THE POWER INDUSTRY



## 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, eliminate potential bearing failure due to process contamination.

## WATERBOX PRIMING

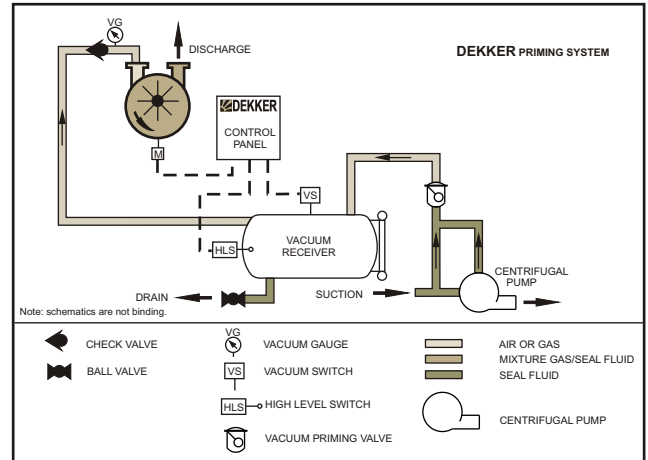
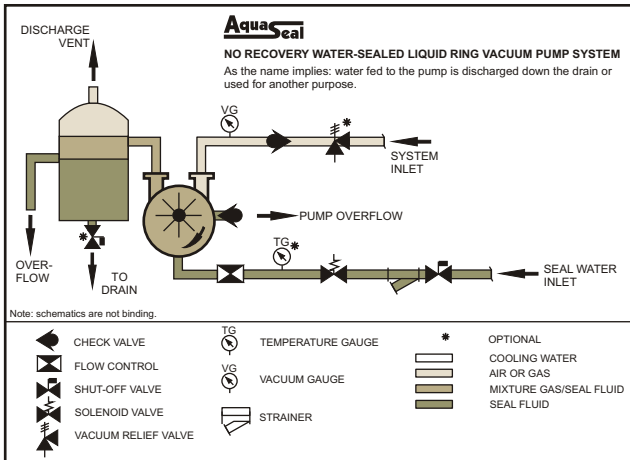
FOR RELIABLE CONDENSER  
WATER BOX AND CENTRIFUGAL  
PUMP PRIMING:

### 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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