

Vacuum Dehydrator

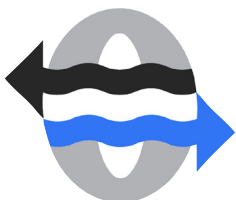
VD6-16LS



Description

Operation

Specifications



Applications

Oil-based hydraulic units and lubrication systems should not contain water or dissolved gases, but in many applications there is no way to prevent such contaminants from entering your machinery. Once in the oil, water causes sludge formations, reduces oil's protection of bearing surfaces, causes more rapid oil breakdown, and reduces filter element life.

The Oilquip, Inc. Vacuum Dehydrator was designed to serve industrial applications such as hydraulic units and lubrication systems in power plants, paper mills, chemical plants, plywood, and lumber mills. It is ideal for water removal in on-shore marine and oilfield installations. Other applications include degasifying and reconditioning insulating fluids in electrical transformers and other apparatus.

Features

Heat exchanger in which removed contaminant vapors condense on the inside of the tubes. This arrangement permits easy cleaning to keep the heat exchanger operating at maximum effectiveness.

Vacuum chamber elements are held in place with spring pins. These will not back out with vibration in operation and prevent over-tightening of the elements.

The temperature control system uses a temperature sensor directly mounted to the heated skin. The heater skin temperature is PLC controlled using a solid state PWM signal. This control concept prevents overheating of the oil.

The use of variable frequency drives on both the inlet and discharge pumps allows the chamber level to be precisely controlled at a lower level than can be achieved with a float valve. This virtually eliminates

foaming.

Automatic oil recirculation is controlled by oil temperature.

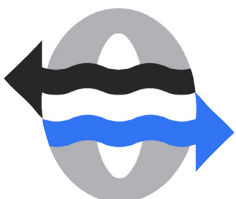
The chamber vacuum control is regulated in a closed loop arrangement, giving precise vacuum control and reducing discharge pump cavitation.

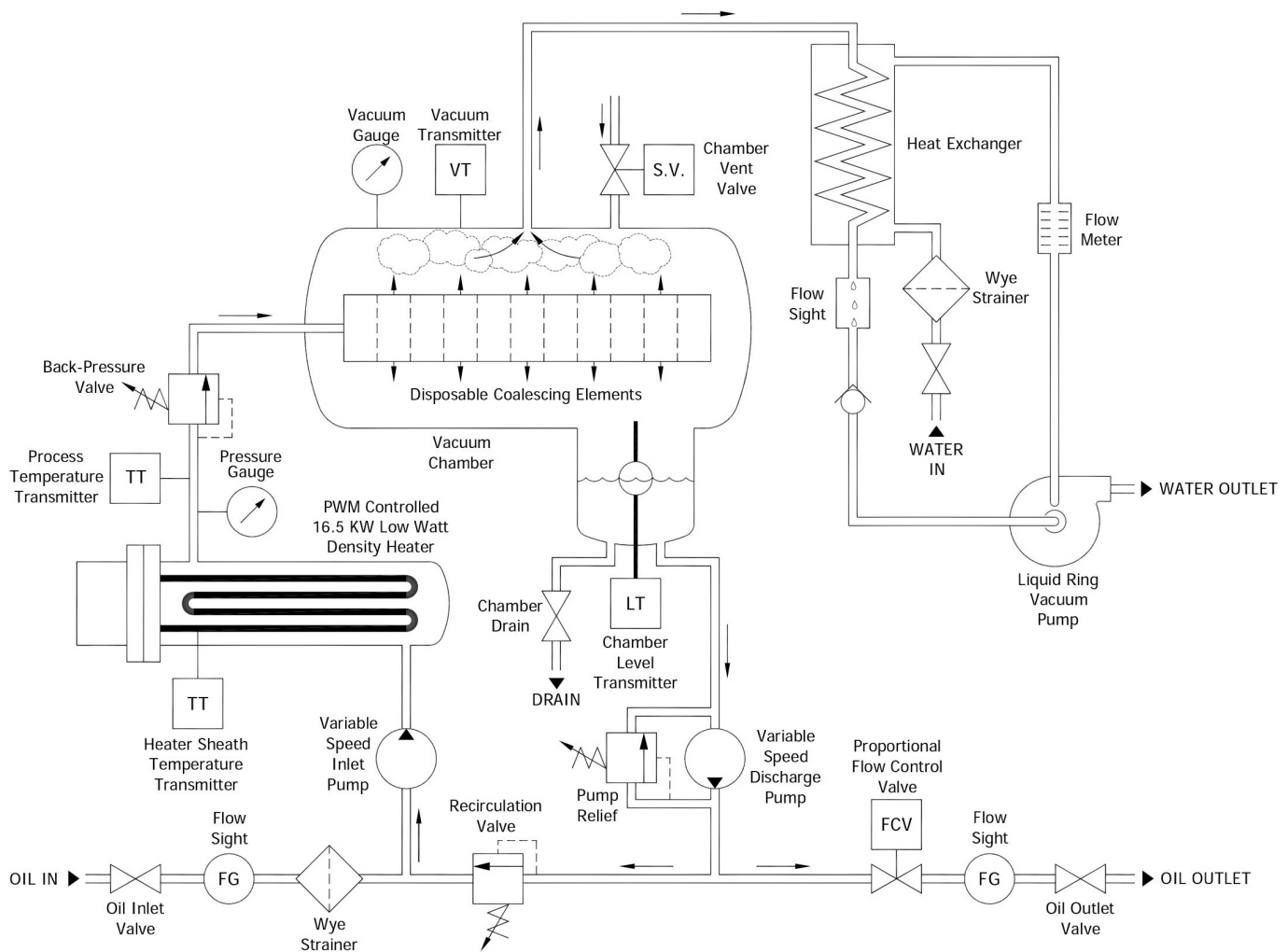
Liquid ring vacuum pump uses same water stream as the condenser providing virtually maintenance free operation.

Operator touch screen displays startup procedure, status, and allows changing of set points.

Single button start and stop simplifies operation.

Rugged skid mount is provided with lifting slots for movement and positioning. (Heavy duty casters or other handling arrangements are available upon request).



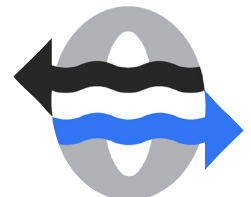


Operation

The Oilquip, Inc. Vacuum Dehydrator removes free, emulsified and dissolved water, light hydrocarbons, and entrained gases from oil. Oil is drawn into the inlet by the inlet pump. After passing through an inlet strainer, the oil is heated to a desired temperature by an electrical heater. The oil then enters a vacuum chamber. There water, dissolved air and gases, and more volatile contaminants are vaporized and separated from the oil. The clean oil is pumped back to the source. Contaminant vapors are drawn off and recondensed in a heat exchanger. Liquefied contaminants are carried off by the vacuum system.

In many applications oil also contains dirt and other solid contaminants. In these applications it is recommended to pre-filter the incoming oil. This extends the life of the vacuum chamber elements and provides more complete oil reconditioning. Pre-filters may be provided in a portable filtration unit or included in the dehydrator package.

Installation and start-up are straight forward. The self contained unit requires three phase electrical power hook-up and a supply of cooling water at a rate of one to two gallons per minute. The contaminated oil source is then connected to the unit's inlet, and a return line is connected from the unit's discharge back to the source. If the compressed air vacuum source is chosen, the air inlet should be connected to a suitable source of plant air. After start-up, once the temperature and flow stabilize, the unit may be operated unattended.



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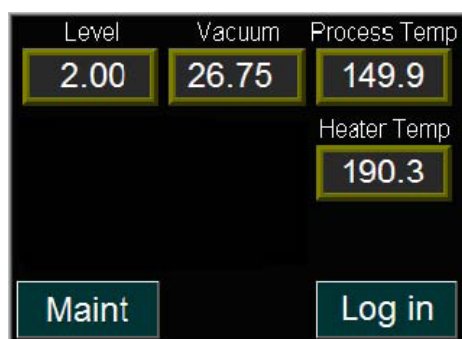
Specifications

Electrical Requirement	460 V, 3 phase, 30 A
Cooling Water Requirement	1-2 GPM
Motors (inlet and discharge pump)	2 HP
Capacity	Up to 6 GPM (variable)
Heater Capacity	16 kW
Oil Inlet Size	1" NPT
Oil Discharge Size	3/4" NPT
Cooling Water Inlet Size	3/4" NPT
Cooling Water Outlet Size	3/4" NPT
Condensate Tank Drain Size	3/4" NPT
Approximate Dimensions	88" (L) x 46" (W) x 80" (H)
Approximate Weight	2,000 lbs

Operator Interface



Start-up screens guide first-time users through a five step checklist to verify that proper utility connections have been made.



A three-step automated start-up begins when the "START" push button is pressed. The main screen appears automatically when dehydration begins.



Set-point screens allow the viewing and modification of temperature, level, vacuum, timer, and alarm set-points.

