



Filtration/PAM Solutions for Wind Turbines

Solutions Focus

Maximize Your Uptime with Eaton

Hydraulic systems provide the most reliable and repeatable wind turbine blade pitch control. When hydraulic system problems occur, 80% of the time they are related to inadequate contamination control practices. Eaton has more than a 75-year history of dedication to helping engineers develop, operate and maintain reliable, high quality power and motion control systems.



Filtration

Eaton's Vickers™ Filters handle flows to 450 US gpm (1700 l/min) and pressures to 6090 psi (420 bar), bypass valves, pressure drop indicators and media grades facilitate filter installation and achievement at desired system cleanliness levels. Reservoir vent filters feature a visual indicator and corrosion-resistant housing. In addition to particle control, these filters also feature water/moisture control, needed in harsh wind turbine conditions.

Protect Your System with Vickers ProActive Maintenance Products and Services

Eaton is committed to the practice of systemic contamination control and superior performance of our products.

Eaton will extend by three years, the standard warranty on all Vickers products used in a system that is protected by Vickers filters applied consistently with the principles of the PAM program. Contact your Eaton representative for more information, or visit us at www.hydraulics.eaton.com.

Products

- Filters
- Portable Particle Counters
- Breathers
- Off-line Filter Units
- Clean Carts
- Water Removal Products

Custom Services

- Laboratory Oil Analysis
- Set Cleanliness Standards
- Recommend System Upgrades
- Fluid Sampling
- Inventory Consolidation
- Data Management





Dirt-gate™ Reservoir Breather (P/N BR210)

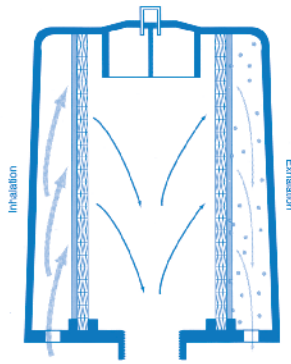
Filters out airborne particles before they contaminate the oil.

Hydraulic reservoirs “breathe” air in and out as the oil level rises and falls. This air contains particles. Particles “sand blast” your machinery. Protect your hydraulic system with a dirt-gate filter.

H2O-gate Reservoir Breather (P/N BR110)

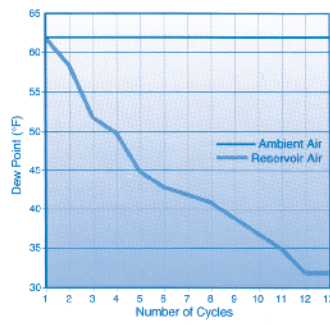
Filters out particles and moisture before they contaminate the oil.

Hydraulic reservoirs “breathe” air in and out as the oil level rises and falls. This air contains particles and water. Particles “sand blast” your machinery and water attacks your oil and components. The H2O-gate reservoir breather filters out particles and moisture. Protect your hydraulic system with this H2O-gate reservoir breather!



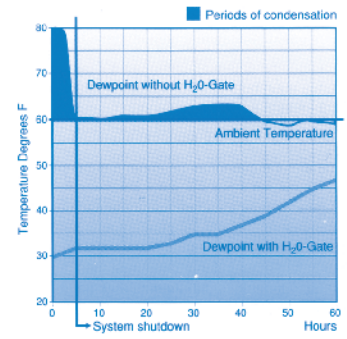
Performs as a gate

During the “inhalation” cycle, the H2O-gate proprietary media blocks the water vapor from entering the reservoir. During the “exhalation” cycle, the media allows the moisture in the reservoir air to exit. The moisture is carried off the media by the exiting air, restoring the media’s water barrier capacity, and the moisture barrier mechanism is not affected by the amount of exposure to moisture. The reservoir air is maintained at a low relative humidity, and more importantly, at a lower dew point temperature than the ambient temperature.



Works even when the system is shut down

The H2O-gate Vent Breather retards the vapor equilibrium process and works to prevent condensation even after the system is shut and cooled down, such as overnight. As this chart illustrates, the dewpoint is slow to climb, even after the system temperature has dropped to the ambient temperature. Once the system has reached ambient temperature, condensation does not occur.



Reduces humidity inside reservoir

The H2O-gate Vent Breather lowers and stabilizes the relative humidity of air inside the reservoir, leading to a lower dewpoint (T_{dewpoint} < T_{ambient} = NO CONDENSATION) at a rate and amount that will be dependent upon several conditions: the ambient conditions, the internal reservoir heat, amount and frequency of reservoir air flow through the vent, and the temperature of the reservoir surfaces.



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