



Company offers contamination control breather filters with desiccant moisture material to provide first line of defense for gearboxes and other fluid reservoirs.

CONTROLLING PARTICULATE AND MOISTURE contamination from lubricants in the fluid reservoirs of gearboxes is a critical aspect in preventing equipment downtime, premature failure and lost production time.

In any industrial application where moving parts are lubricated or powered with fluids, the reservoir vents air as the fluid levels rise and demands additional air as those levels fall. Many traditional air venting methods provide minimal contamination control. Most OEM filters will prevent ingress of particles down to about 40 microns, which means that dirt particles large enough to cause severe damage are able to enter the fluid causing wear and tear, premature equipment failure and more frequent maintenance. Those particle filters do nothing to keep out equally damaging moisture, which changes the lubricity of the fluids, breaks down essential additives, and leads to corrosion inside the headspace of the gearbox.

By using desiccant breathers to replace existing breather caps or air vents on fluid reservoirs and gearboxes, it is possible to extend the useful life of the lubricant and keep the fluid cleaner longer, according to Scott Dunbar, Vice President at Air Sentry®. “Air Sentry contamination control breathers provide the first line of defense in contamination control with 2-micron absolute filtration and highly effective moisture removal,” he said.

A division of Whitmore, a leading maker of specialty-lubricants, coatings and sealants, Air Sentry offers contamination control products for a broad variety of industries, including wind energy.

Introduced in 1997 to help its customers increase fluid cleanliness and lower maintenance costs, the breathers include two 2-micron filters with a desiccant chamber to trap moisture before it reaches the fluid.

“To understand the scale of contamination that is prevented, consider that an average human hair is about 80 microns across. If you cut that hair into 40 even slices, they would be two microns wide. Typically as you get tighter and tighter tolerances on bearings and other meshing gears, you are looking at a one-to-three micron boundary layer, which is basically the fluid layer of oil between the mating surfaces passing over one another. Particles in the lubricant larger than this boundary layer lead to metal wear on gear teeth and bearings, and that metal wear is exacerbated because you now have two rough surfaces passing over one another. It’s a downward spiral of metal

wear with more and more metal particles floating in the lubricant. Keeping that from happening is essential to the longevity of the fluids and the life of the gearbox.”

Dunbar said the wind industry in particular has been more receptive to looking for ways to improve reliability because of the expense involved in the equipment, the remote locations where wind farms are often situated and the difficulty to access those remote locations in emergencies for maintenance situations.

Air Sentry desiccant breathers utilize an indicating dye on their silica gel desiccant that starts out as bright orange and becomes dark green when fully saturated, or absorbed. By providing a clear visual indicator of the condition of the drying agent, maintenance personnel know when to change the filter.

“Most of the studies we’ve seen are conservative in estimating that you will double the life of your lubricant and more than double the life of your equipment by using these contamination control devices and other reliability centered maintenance procedures,” Dunbar said.

Air Sentry® was the first company to integrate check valves into desiccant breathers, which extends the life of the breather by blocking ambient air from reaching the desiccant, and allowing only the air drawn into the fluid reservoir to be treated – this can extend the life of a breather by a factor of two to five times, depending on the condition of the ambient air.

The company now offers the new Guardian™ series of breather that takes the many Air Sentry innovations to the next level. The Guardian™ is constructed of Tritan™, a material that is more resistant to chemicals, extreme temperatures and impact than other plastics. It is also BPA free and recyclable. The check valves in the reusable top cap prolong the life of the desiccant while the reversed check valves in the reusable metal reinforced base exhaust outgoing air to the atmosphere rather than back through the desiccant. An optional Isolation Check Valve at the bottom of the replaceable cartridge prevents oil mist and splashing fluids from potentially coating the desiccant limiting airflow, which could damage delicate seals.

Air Sentry is ISO 9001 and ISO 14001 certified and available through the company’s worldwide distributor network. Extending lubricating fluid life, improving productivity and reducing maintenance costs help make wind energy operations more profitable. - S.M. ↵

For more information, visit www.airsentry.com or call 855-242-2792.