

SENTRY™

AUTOMATIC MODEL – HOW IT WORKS

BLACOH pulsation dampeners are manufactured with a variety of different control modules to suit specific application requirements. Our automatic air control models are a simple and effective design with far fewer parts and less maintenance than competitors' models.

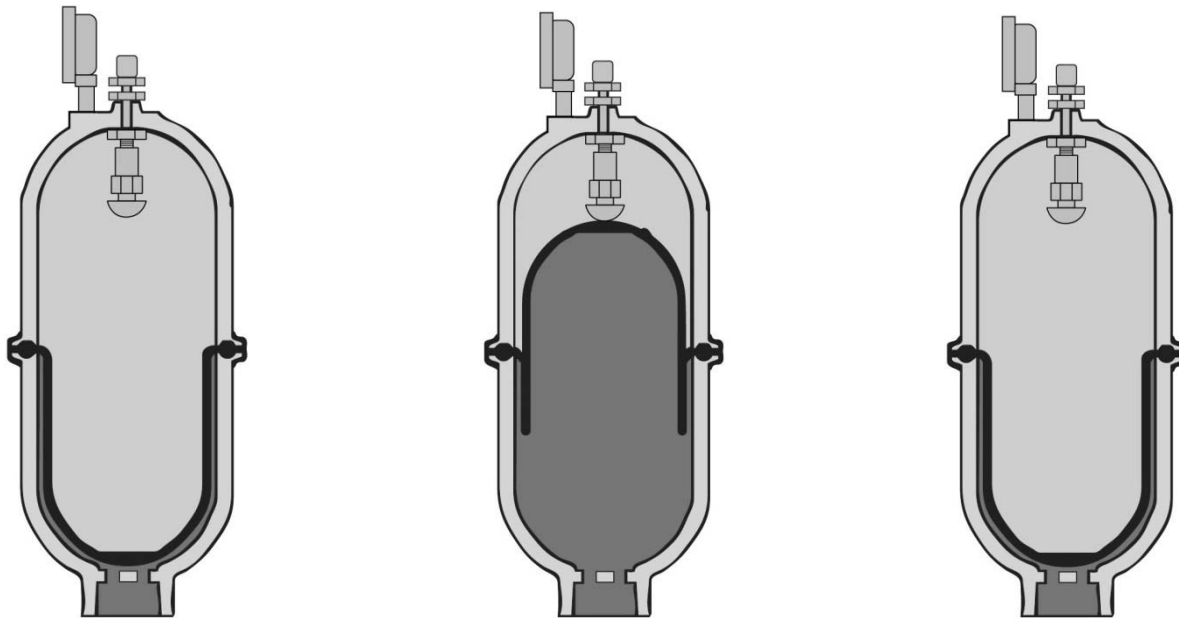
We're often asked how the automatic model works. Specifically, how is air pressure inside the dampener reduced to start a new pump cycle when, for example, feeding a filter press. It's really quite simple.

Automatic models have a push button valve located in the top (non-wetted) part of the dampener that connects to an external source of compressed air. Initially, air in the dampener is at atmospheric pressure. When a pump cycle starts, liquid from the discharge piping is pushed into the dampener which displaces the internal bladder upward reducing the space for air. Since pressure is inversely proportional to space, air pressure in the dampener increases as the bladder moves progressively upward. As pump discharge pressure increases, more liquid enters the dampener further reducing the volume of air and increasing dampener pressure.

At some point in the process (depending on dampener size), the internal bladder bumps against the push button valve allowing compressed air to enter until air pressure in the dampener is equal to liquid pressure in the piping system. The bladder then moves away from the push button valve which stops the flow of compressed air into the dampener. When liquid pressure in the system increases again the process is repeated.

The automatic push button valve is located at a specific depth inside the the dampener so that the bladder will bump the push button when approximately 90% of the dampener is filled with liquid and the remaining 10% with compressed air.

When the pump cycle is complete and liquid flow in the system stops, compressed air above the bladder pushes it down to its original position into the lower wetted portion of the dampener. As the bladder moves down space for compressed air increases which reduces dampener pressure. The dampener is now ready for the next pump cycle. A few pounds of pressure (5 to 10 psi) will remain in the dampener at the end of a cycle. This is usually insignificant but, if dampener pressure must be at zero psi there is a release button on the top of the dampener to remove all pressure.



Cycle START

Operation

Cycle STOP

BLACOH has been providing fluid flow solutions for pumping systems worldwide since 1976. Our complete line of SENTRY pulsation dampeners, surge suppressors and inlet stabilizers protect pumps and system components from destructive pulsation, pressure surge and hydraulic shock, and act as accumulators to store fluid energy wherever hydraulic fluid is used as a power source. BLACOH products are manufactured in the USA to exacting standards in a variety of sizes, materials and pressure ratings to suit virtually every application.



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