

BLACOH BUZZ

SUMMER 2011 - VOLUME 2



RUN, DON'T WALK!

Andrew Yeghnazar, President

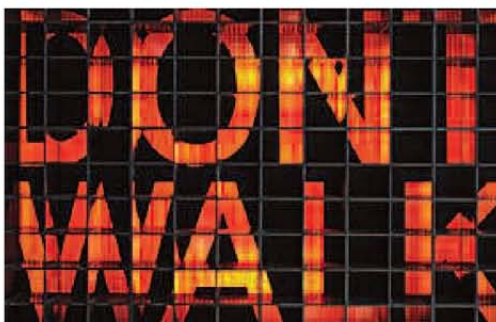
“Walk, don’t run.” How many times have you heard or said that? Sounds normal, doesn’t it? However, from a contrarian perspective, we’re looking towards the future in a somewhat different manner here at BLACOH. It’s a perspective that’s both positive and proactive. In fact, we’re challenging ourselves, and would also say to you: “Run – Don’t Walk!”

Some businesses are looking at the global economy, the Arab Spring, fluctuating oil prices, a dismal housing market, etc., and taking a sit back, wait and see approach. Wait and see? Wait for what? For your business to shrink? For someone to take your customers away? For the phone to ring so you can hopefully take an order? Is that the best we can do? That is not how this great country was built or what made it into a global powerhouse in business, innovation and competition.

Are we oblivious to current events and a struggling global economy? Definitely not. But, we must make progress with purpose and intensity. There are so many opportunities out there for growth with problems that must be solved and needs that must be met. And BLACOH is determined to capitalize on those opportunities, doing more than can be reasonably expected to win more than our fair share of business. But, we cannot and do not want to do it alone. We want to do it together with you, our partners, and so, we challenge you to “Run, Don’t Walk!”

For our part, we’re continuing to expand our talent base here at Team BLACOH and realigning key positions that we believe are critical to support market expansion, improve our product offerings and continue to deliver world-class customer service. Clearly this is not the time to sit back, see what happens and limp along. We’re running the race to win and giving it everything we’ve got. Our wish is that your business be as energized as we are, and may you also experience the level of growth we are seeing and continue to anticipate. We thank you for your partnership – let’s run together!

Andrew
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WHAT'S THE BUZZ?

BLACOH People in the News

As our business continues to grow and expand globally, and with even more exciting opportunities on the horizon, we are continuing to invest in our support structure to ensure that as we grow, so does our support for our customers. A significant portion of that investment is dedicated to our most important resource – people.



Marcus Wheelwright



Greg Grisafe



Gene Wardlow



Kimmie Johnson



Thomas Kruut

Marcus Wheelwright has been appointed Business Development Manager, responsible for the Technical and Sales Support group. He will also focus on increasing business in the Western United States, and will continue managing sales for the Northeastern region until a replacement is announced. **Greg Grisafe** has been named Technical Support Manager and will anchor the Inside Sales Support group, and long-time BLACOH staff member **Gene Wardlow** has been promoted to Production Manager. **Kimmie Johnson** joins us as our new Global Sourcing Manager, with leadership skills in procurement, logistics and manufacturing. Our new Engineering Manager, **Thomas Kruut**, has extensive experience in engineering, design and fluid management, and will be responsible for all engineering functions, along with new product development and innovation. He will also be available to provide detailed engineering support to customers.

IN THE SPOTLIGHT

SENTRY CIP: The New Sanitary Flow Through Dampener by BLACOH

Our new flow through dampener is specifically designed for hygienic applications that require clean-in-place components.

- Inline, flow through design eliminates product holdup
- Self-draining single body construction allows for easy clean-in-place with simplified maintenance and repairs
- Ideally suited for handling slurries and viscous fluids
- Gentle enough for the most delicate products



Unique Patent Pending Tube Bladder

The SENTRY CIP's unique tube bladder has internal ribs to prevent collapse under pressure, replacing other designs with perforated tubes that collect and trap particles. Made of USP Class VI pharma-grade silicone, tube bladder ends are molded to connect directly to pipe and seal with Tri-Clamp fasteners, eliminating the need for separate gaskets.

Stainless Steel Single Body Construction

Increase System Productivity and Lower Operating Costs

Constructed of 316L stainless steel with 2.5 inch Tri-Clamp connections, the single body SENTRY CIP dampener is available with your choice of adjustable or chargeable air controls. Normally installed in a horizontal position, an end cap option allows for vertical mounting.

For more information or to speak with an experienced Customer Focus Team member, call BLACOH today at 951.342.3100 (toll free 800.603.7867) or email Sales@blacoh.com. A new product brochure featuring information on the SENTRY CIP flow through dampener is now available in print and online on our web site at www.Blacoh.com/Literature.

DON'T PUMP WITHOUT US

AODD PUMPS & PLANT SAFETY: What Happens When Pump Diaphragms Fail?

As anyone familiar with the function of an AODD pump can attest, pump diaphragms fail. When they do, process fluid is expelled through the pump's air exhaust port, spilling into the environment. Spills can result in significant expense due to lost product, hazardous material cleanup, EPA reporting and system downtime. Worse, spills resulting from pump diaphragm failure put your employees at serious risk. Case in point: a major chemical manufacturer was using a 1" AODD pump to transfer caustic from a holding tank to a process tank when the pump's diaphragm ruptured. At that moment, a plant worker happened to be standing next to the pump and was critically injured when doused with caustic. Tragically, this accident could have been avoided with BLACOH's patented SPILLSTOP system.

SPILLSTOP is a fully pneumatic device that attaches directly to the exhaust of an AODD pump. When pump diaphragms fail, process fluid that would have spilled out through the pump's exhaust is captured in the SPILLSTOP's internal receptacle. The contained fluid raises a float switch to automatically shut down the failed pump. SPILLSTOP can also be configured to sound a warning alarm and/or start a backup pump. By installing this simple, cost-effective device you can significantly improve plant safety wherever AODD pumps are at work.



SPILLSTOP Leak & Spill
Prevention System
US Patent # 5,501,577

FEATURED APPLICATION STORY

WATER HAMMER

APPLICATION: A flavor and fragrance manufacturer located in New Jersey called on a BLACOH distributor, ProcessFlo, to specify dampeners for their five-zone CIP (clean-in-place) application.

PROBLEM: Fast acting valves from the various zones are sequentially opened and closed numerous times to allow the flow of CIP solution to spray nozzles located in each zone. When fast acting valves open and close, it causes a sudden change of direction in fluid moving with extreme velocity. This causes a water hammer spike that can be anywhere from six to nine times the normal operating pressure. The water hammer spike was destroying pipe, valves and pumps located in these zones.

SOLUTION: ProcessFlo, along with BLACOH, specified and installed five sanitary surge suppressors. BLACOH models CT7120ND, CT7125ND, and CT7220ND were installed to absorb the pressure spikes caused by the quick closing valves. Since the installation of these units, the manufacturer has prevented leaking pipe issues that were causing downtime and costing valuable production.



Congratulations to **Todd Tillou** at ProcessFlo for his Water Hammer application story selected for publication in this issue.

Have an application story to share? Submit your story for publication and receive a gift with our thanks.

Receive a \$100 gift card if your story is published.
Submit application stories and photos to Sales@blacoh.com or, go to the Applications page on our web site and click on the *Submit A Story* link to download a story submission form.



Gary Cornell Recognized by the Hydraulic Institute

BLACOH Chairman/CEO Gary Cornell was recognized by the Hydraulic Institute for his technical leadership and contributions in the creation of ANSI/HI Standards. He was Chair of the committee that revised *Air-Operated Pumps for Nomenclature, Definitions, Application, and Operation, ANSI/HI 10.1-10.5-2010*, an excellent resource for anyone unfamiliar with the operating principles of air-operated diaphragm and bellows pumps. He also chaired the committee that updated the standard for *Air-Operated Pump Tests, ANSI/HI 10.6-2010*, the newly revised standard that applies to the test of air-operated pumps.

Gregg Romanyshyn, HI Technical Director (left) and Gary Cornell, BLACOH Chairman/CEO (right)



THE NECESSITY OF FLUID CONTROL – PART II

Gary L. Cornell, BLACOH Fluid Control, Inc.

Pulsation and water hammer can be limited with proper forethought and equipment.

Part I of this article "Positive Displacement Pumps & Pulsation Control" appeared in the Spring 2011 issue of BLACOH BUZZ.

WATER HAMMER/HYDRAULIC SHOCK

While pulsation is the effect of rapid acceleration and deceleration of fluid in motion, water hammer occurs when fluid in motion is suddenly started, stopped or forced to change direction. Whenever fluid velocity changes rapidly, water hammer should be anticipated.

Fluid velocity, volume and density all contribute to the pressure spike created when fluid in motion suddenly stops and kinetic energy is released. The kinetic energy, released as pressure, can spike up to six times the system's operating pressure, destroying system instrumentation, pumps, pipes, fittings and valves. Unrestricted, this high-pressure surge, commonly referred to as hydraulic shock or water hammer, will rapidly accelerate to the speed of sound in liquid creating an acoustic wave or transient which can exceed 4,000 feet per second. The water hammer shock wave travels the length of the pipe back to the pump, and then reverses again. It oscillates back and forth until friction dissipates the pressure spike or the weakest component in the system fails. Water hammer should be suspect whenever fluid velocity is 5 feet per second or greater.

Quick closing valves, rapid pump startup/shutdown and even changes in the pipe profile can cause an abrupt change in fluid velocity, which can produce violent and sometimes catastrophic water hammer. For example, if the pipe is full of liquid at pump startup, that stationary liquid must be accelerated. When the pump pushes liquid into the pipe it hits the stationary liquid. When a pump shuts down, liquid continues to move down the pipe due to momentum resulting in a void at the pump discharge that

is an area of low pressure. The liquid in the pipe can reverse direction into this area striking a check valve or the pump itself. A momentary power failure can create even greater hydraulic shock. When the pump stops, flow will reverse back to the pump just as power is restored and flow is restarted causing a head-on collision between the two water columns.

Generally, the most common cause of hydraulic shock is a quickly closing valve usually defined as a valve closing in 1 ½ seconds or less—typically a ball or butterfly type. Flow velocity is stopped rapidly, energy is concentrated and an acoustic shock wave is created. Air relief valves, vacuum breaker valves and pressure relief valves are often used in specific areas to help mitigate hydraulic shock resulting from fast closing valves.

One commonly used solution for controlling hydraulic shock is a surge suppressor. This device is similar in construction to a pulsation dampener but sized and installed differently. The surge suppressor acts as a reservoir or accumulator to absorb and release fluid as needed. By doing so, it controls the rate of velocity change to a level slow enough to prevent water hammer. Three guidelines must be followed when using surge suppressors to prevent or minimize water hammer:

- The device must be located in the correct area.
- It must be sized properly to accumulate the correct amount of liquid.
- It must be pre-charged with nitrogen to provide the proper shock control.

Every fluid system is different and many can be complicated. This article is designed only as an introduction, and in many situations, professionals in the field of hydraulic shock should be consulted, especially before construction of a new system.



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World Headquarters

601 Columbia Ave, Bldg D, Riverside, CA 92507 USA • www.blacoh.com

Phone: 951.342.3100 • 800.603.7867 • Fax: 951.342.3101 • Email: Sales@Blacoh.com

