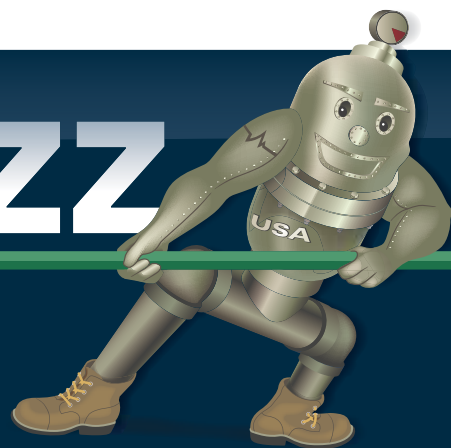


# BLACOH BUZZ

SPRING 2011 - VOLUME 1



## From the President

Andrew Yeghnazar

Warm greetings and best wishes for a great year to all. But, be warned... before you can blink 2011 will be a distant memory. Before you know it, the time to make good on all those promises, commitments and resolutions you had good intentions for will have come and gone. It seems that life just moves so fast these days. Still, we are enthusiastic about the future and what is taking place with Team BLACOH on so many fronts. Through this quarterly newsletter, *BLACOH BUZZ*, we hope to share some of that with you and keep you well informed.

Now, *BLACOH BUZZ* is not intended to be the next Bloomberg or Industrial Equipment magazine but rather, a simple piece designed as a tool through which we at BLACOH can connect to and communicate with you, our valued Customers and Partners. BLACOH is made up of ordinary people who, as a team, believe we can do extraordinary things in the markets we serve. We refuse to settle for what is *good* when we can provide what is *best*. We are keen and motivated to expand both the markets we serve and the products with which we serve them.

As you know, from a product perspective we live to "dampen" and reduce any pulse, and solve your surge challenges... we can and we will. *BUZZ*'s goal is the contrary - to generate passion and fuel excitement coupled with creative action which will result in mutually beneficial growth. Together we can achieve that.

We hope you enjoy and are challenged by *BUZZ*. Thank you for all you do and we look forward to a great year ahead together.

*Andrew*  
#

## TOOLS YOU CAN USE



Check out what's new on Blacoh.com  
(See inside for details)

## Inside This Issue:

- **What's the BUZZ?**  
*CRN Certification for Saskatchewan*  
*SENTRY 10 cubic inch Stainless Steel*
- **In the Spotlight**  
*Stainless Steel High Pressure Dampeners:  
Pressure Ratings up to 13,500 psi*  
*High Pressure PVDF Dampeners:  
Chemically Resistant with Operating  
Temperatures up to 285°F*  
*Accumulators for the Fluid Power Market:  
Increase System Productivity and Lower  
Operating Costs*
- **Tools You Can Use at Blacoh.com**  
*New Accumulator Product Information*  
*Product Brochure Available in Foreign Languages*  
*Enhanced Online Quotes & Drawings*
- **Featured Application Story**  
*Dosing - Deep Well Methanol Injection*
- **The Necessity of Fluid Control - Part I**  
*Pulsation and water hammer can be limited with forethought and equipment*



Join us at OTC2011

# WHAT'S THE BUZZ?

## CRN Certification for Saskatchewan, Canada

BLACOH has received CRN registration for the Province of Saskatchewan, Canada for its SENTRY Pulsation Dampeners. This registration, like BLACOH's CRN registrations for Alberta and Ontario provinces, is for all metal models with threaded inlets and pressure ratings up to 300 psi (2068 kPa) in 4, 10, 36, 85, 175 and 370 cubic inch sizes.

With CRN registrations for SENTRY Pulsation Dampeners in Alberta, Ontario and Saskatchewan, BLACOH now has approval in the three major Canadian markets where pulsation dampeners are used.

# CRN

## SENTRY 10 cubic inch Stainless Steel replaces Carbon Steel

Due to increased material costs and reduced demand for carbon steel SENTRY 10 cubic inch dampener models, these models were replaced with stainless steel effective October 12, 2010. The change allowed us to continue to meet your product needs at the best possible price.

The 1040 model series for carbon steel 10 cubic inch was replaced by 1020 model series for stainless steel. Consult BLACOH for specific model numbers and pricing.



## IN THE SPOTLIGHT

### Stainless Steel High Pressure Dampeners: Pressure Ratings up to 13,500 psi

BLACOH recently introduced its new line of SENTRY high pressure pulsation dampeners in 316L stainless steel for systems using reciprocating, positive displacement pumps. With pressure ratings up to 13,500 psi (930 bar) and temperature ranges from -60°F to +225°F (-51°C to +107°C), these new high-pressure models are ideally suited for metering and dosing applications typical in the oil & gas industry. Available in sizes up to 24 cubic inch, depending on pressure requirements, with Viton, Buna or EPDM bladders.



### High Pressure PVDF Dampeners:

Chemically Resistant with Operating Temperatures up to 285°F

BLACOH's high pressure PVDF dampener models are constructed with both the wetted and non-wetted bodies in PVDF (Kynar®), and are generally less expensive than comparable stainless steel models necessary for higher pressure applications.

PVDF plastic is strong, highly chemical resistant and operates at temperatures up to 285°F (140°C). Extensive pressure testing at ambient temperatures has demonstrated that these higher pressure ratings are justified, while still maintaining a better than 4 to 1 safety margin at burst pressure.

### Accumulators for the Fluid Power Market:

Increase System Productivity and Lower Operating Costs

Used in a variety of applications across multiple industries, Accumulators store fluid as energy to be released on demand and are common components in hydraulic circuits and machinery. BLACOH now offers a full line of Accumulators specifically designed for the fluid power market, with single body construction for maximum safety in high pressure applications. Available in a variety of sizes and materials suitable for the most demanding applications, with pressure ratings to 5,075 psi (350 bar).

- Bladder, Diaphragm and Piston models
- Bottom and Top Repairable options
- Tested at 1.5 times maximum pressure
- Built to meet ASME standards and most international pressure vessel code requirements



OIL & GAS  
AND OFFSHORE

INDUSTRIAL

AGRICULTURE

POWER  
GENERATION

MACHINE  
TOOLS

MINING

## TOOLS YOU CAN USE



### Enhanced Online Quotes & Drawings

We've made enhancements to our online *SpeedQuote* tool to make it easier to request quotes and drawings online. Just input a BLACOH model number and then click the "ADD" button to input another model number. Add as many models as you like and then request a quote or get drawings.

### New Accumulator Product Information

Visit [Blacoh.com](http://Blacoh.com) for the latest information on our complete line of Accumulators. Click on the Products tab and select Accumulators or, go to Literature to download the new *BLACOH Accumulators* brochure.

### Product Brochure Available in Foreign Languages

In addition to SENTRY Installation & Operation Manuals, the all new *BLACOH Fluid Control Products* brochure is now available online in several foreign languages. Go to the Literature page at [Blacoh.com](http://Blacoh.com) and select an option from the Language menu in the upper right corner.

## FEATURED APPLICATION STORY

### DOSING: Deep Well Methanol Injection

**APPLICATION:** Hydroplex HP-350 triplex plunger pump (0.75 gpm at 10,000 psi) for high pressure deep well methanol injection in an oil & gas upstream pumping application.

**PROBLEM:** On the discharge side of the pump, the amount of methanol the pump is dosing is metered. Without a dampener to control pulsations and smooth out the flow, the installed flow meters will not give accurate readings. Additionally, when using a triplex pump it is important that all three chambers of the pump stay full of fluid with no voids. Any voids or pockets can cause seals to leak, pump vibration and excess pump noise.

**SOLUTION:** A 12 cubic inch 10,000 psi SENTRY XPX model pulsation dampener was installed at the pump discharge to smooth out the flow and remove any pressure pulsations, thus allowing the dosing to be more accurate. An 85 cubic inch SENTRY inlet stabilizer (suction dampener) was installed on the inlet side of the pump to act as an accumulator to keep the pump chambers filled. The inlet stabilizer dampener also removes pulsations created by the pump on its inlet stroke.



SENTRY  
Inlet Stabilizer

SENTRY High Pressure  
Discharge Dampener



Submitted by Tommy Miller, AGI Industries

AGI Industries

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](mailto: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.



# THE NECESSITY OF FLUID CONTROL – PART I

Gary L. Cornell, BLACOH Fluid Control, Inc.

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

The control of fluid dynamics is essential to ensure the efficient, reliable and safe operation of pumping systems. A pump puts fluid in motion by adding energy to it. This kinetic energy, observed as pressure, is carried in the fluid and slowly lost to friction in the piping system. Uncontrolled fluid in motion can physically destroy the pump, piping, valves, meters and other system components.

## POSITIVE DISPLACEMENT PUMPS

Positive displacement pumps rapidly accelerate and decelerate fluids that are in motion. They derive their pumping action by capturing a specific quantity of process fluid in a chamber and then pushing it out of the pump's discharge. During the pump's suction stroke, an inlet valve is raised and an outlet valve is closed, allowing fluid to enter the pumping chamber. On the discharge stroke, the inlet valve is forced closed. Hydraulic pressure created by the pump's piston opens the outlet valve to push the fluid out. This start and stop pumping action accelerates and decelerates the fluid creating units of uncontrolled kinetic energy resulting in pulsations observed as pressure spikes. Vibration is the most visible effect of pulsation and the problem that most often leads to system component failure.

Single diaphragm metering pumps create a start and stop action resulting in wide pressure fluctuations. With each stroke of the pump, a small volume of fluid is discharged that must re-accelerate the fluid in the piping. The pump then has to overcome the resulting spike in pressure to continue to discharge process fluid.

A peristaltic pump, also called a hose pump, has a hose inside the case. A roller shoe at the pump inlet squeezes the hose trapping liquid in the tube ahead of it. As the roller shoe rotates, liquid is pushed out the pump's discharge. When the roller shoe releases the hose after discharge, a momentary void is created, and a partial vacuum results as some product is sucked backed to the discharge.

Gary L. Cornell is Chairman/CEO of BLACOH Fluid Control based in Riverside, California. Mr. Cornell has worked in the reciprocating pump industry for more than 35 years and is a member of the Hydraulic Institute and the American Society of Mechanical Engineers. For more information, contact BLACOH at 951-342-3100 (toll free 800-603-7867), or visit BLACOH's web site at [www.blacoh.com](http://www.blacoh.com).

This action, along with the normal pulsations from the pump's positive displacement nature, makes dampening the discharge flow on a peristaltic pump difficult.

The same pulsing action and pressure variations occur at the pump's inlet. As a roller shoe passes across the pump inlet and closes it off, flow into the pump momentarily stops. If the pump inlet is under positive pressure, acceleration head will cause damaging pressure spikes and vibration. If the pump inlet is under vacuum, cavitation and pump starvation can occur.

## PULSATION CONTROL

Options for minimizing pulsation damage include using heavy walled pipe, additional pipe braces, snubbing devices on equipment and back pressure valves (sometimes). Generally, dampeners provide the most compact, efficient and cost-effective method. The most common type of dampener is a hydro-pneumatic pressure vessel containing compressed air or nitrogen and a bladder or bellows that separates the process fluid from the gas charge. The dampener is installed as close as possible to the pump discharge with a gas charge that is slightly below normal system pressure.

The amount of pulsation absorbed is a function of the dampener size to the pump stroke volume. The pulsation dampener absorbs the pressure spikes created by the rapid acceleration of fluid from the pump's discharge. On each pump stroke, the dampener fills with process fluid and then discharges some of the accumulated fluid when the pump is on its suction stroke to keep the fluid in motion. By controlling the fluid's motion, the dampener prevents system piping fatigue, enhances meter performance and protects gauges and other inline instrumentation. By minimizing pulsation, dampeners can be beneficial in applications requiring an even and continuous flow.

Look for Part II – Water Hammer/Hydraulic Shock  
in the next issue of BLACOH BUZZ



Offices in US, Europe and opening soon in Asia

### World Headquarters

601 Columbia Ave, Bldg D, Riverside, CA 92507 USA • [www.blacoh.com](http://www.blacoh.com)

Phone: 951.342.3100 • 800.603.7867 • Fax: 951.342.3101 • Email: [Sales@Blacoh.com](mailto:Sales@Blacoh.com)

