

# Introduction

## SINCE 1976

From common pumping system problems to complex issues involving fluid dynamics, Blacoh has been improving the performance, reliability, safety and productivity of pumping systems for more than 46 years.

## FULL SYSTEM SOLUTIONS

As the industry's leader and foremost expert in the design and manufacture of fluid control products, Blacoh has the most expansive offering in the marketplace, all proudly made in the USA and backed by our team of engineering and application experts.



[blacoh.com](http://blacoh.com)

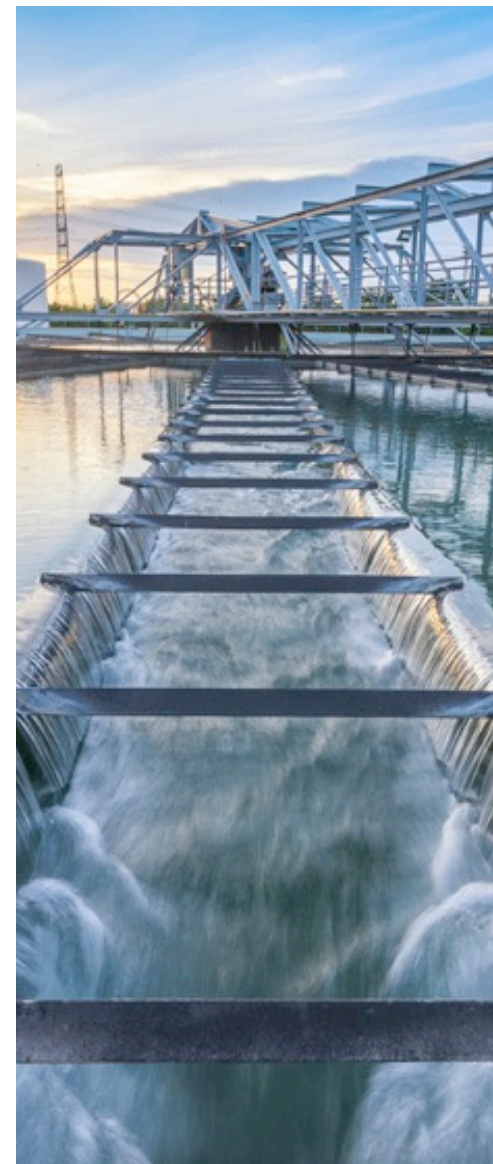
**BLACOH**<sup>™</sup>  
INDUSTRIES

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# BLACOH™

INDUSTRIES

Blacoh Industries stands as the premier choice for chemical metering solutions, offering unparalleled expertise in fluid control. With industry leading durability and reliability, Blacoh's pulsation dampeners and surge suppressors deliver consistent performance, reducing maintenance costs and prolonging the lifespan of municipal systems.



[Blacoh.com](http://Blacoh.com) | [951.342.3100](tel:951.342.3100) | [sales@blacoh.com](mailto:sales@blacoh.com)

## Our Mission

### One Team, One Dream.

Blacoh will win by investing in premier talent and partners that work together to create solutions engineered to protect fluid systems. The strength of this fearless and collaborative approach will provide value to our customers as measured by our key performance indicators.

## Our Vision

### Earning Your Trust.

Blacoh will earn the trust and loyalty of global customers by leveraging decades of experience, our passion, and our unique total system approach to engineered solutions that will overcome the toughest fluid system challenges.

[Blacoh.com](http://Blacoh.com)  
[Sales@Blacoh.com](mailto:Sales@Blacoh.com)





# Industries Served

Chemical Process

Paint & Coating

Water Transmission & Treatment

Biotech & Pharmaceutical

Gas, Oil & Petrochemical

Mining

Pulp, Paper & Textile

Wastewater

Consumer Goods

Food & Beverage

Power Generation

Aerospace

Fire Protection



# Pulsation

The reciprocating action of positive displacement pumps rapidly accelerates and decelerates fluid in motion, resulting in destructive pulsations observed as pressure spikes. Vibration is the most visible effect that most often leads to system component failure.

The same pulsing action and pressure variations occur at the pump's inlet. 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.



# Surge

## (Water Hammer)

Surge, commonly referred to as water hammer, occurs when fluid in motion is suddenly started, stopped or forced to change direction. Fluid velocity, volume and density all contribute to the pressure spike created when fluid in motion suddenly stops and kinetic energy is released, destroying system instrumentation, pumps, pipes, fittings and valves.

Quick closing valves, rapid pump startup or shutdown, and even changes in the pipe profile can cause an abrupt change in fluid velocity causing significant and sometimes catastrophic water hammer.



# Effects of Pulsation & Surge

Inability to accurately measure flow rates.

Shaking, swaying or moving piping.

Damaged valves, gauges, regulators filters and other components.

Undiagnosed piping noises.

Ruptured piping, seals, or gaskets.

Product splashing and foaming.

Reduced equipment performance.

Leaking pipes, valves, flanges, or other connections.

Loose pipes or supports.

Inaccurate pressure gauge readings.

Pump diaphragm failures.

Process fluid spills.

Stress marks or deformation in materials.



# Prevention Driven Results

Pumps, piping, valves, fittings, and components protected from damaging vibrations and fatigue.

Uniform and continuous flow in spraying and coating processes.

Improved accuracy and longevity of flow meters, pressure gauges, and other inline instrumentation.

Smooth and consistent fluid flow in metering pump systems, chemical injection processes, and dosing applications.

Acceleration head loss eliminated and risk of cavitation reduced.

System protected from destructive water hammer caused by quick closing valves or pump startup/shutdown.

ISO

WBENC



NSF



# Certifications

ISO 9001:2015 Certified

WBENC Certified Women Owned Business

CRN Canadian Registration

NSF/ANSI/CAN 61 & NSF/ANSI 372

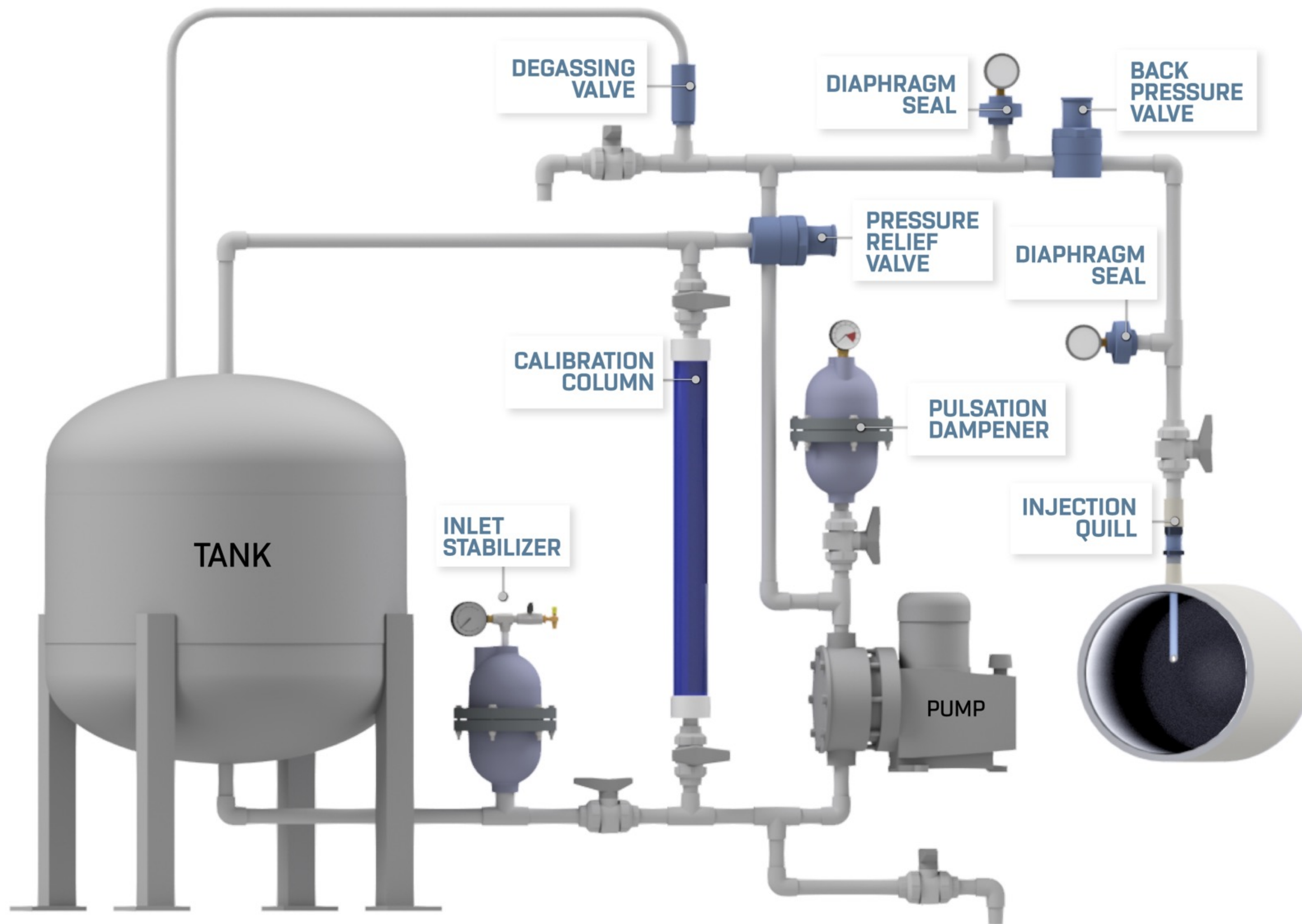
ATEX Certification European Union

PED Classification

BIS Export Compliant

ARRA Buy American Compliant

# Full System Solutions





# Pulsation Dampeners

## **Pulsation & Surge Dampeners**

SENTRY™ Pulsation and Surge Dampeners with pressure ratings up to 15,000 psi minimize pulsation, eliminate vibration, prevent water hammer, and ensure a consistent and laminar fluid flow in systems using positive displacement pumps.

## **Inlet Stabilizer Dampeners**

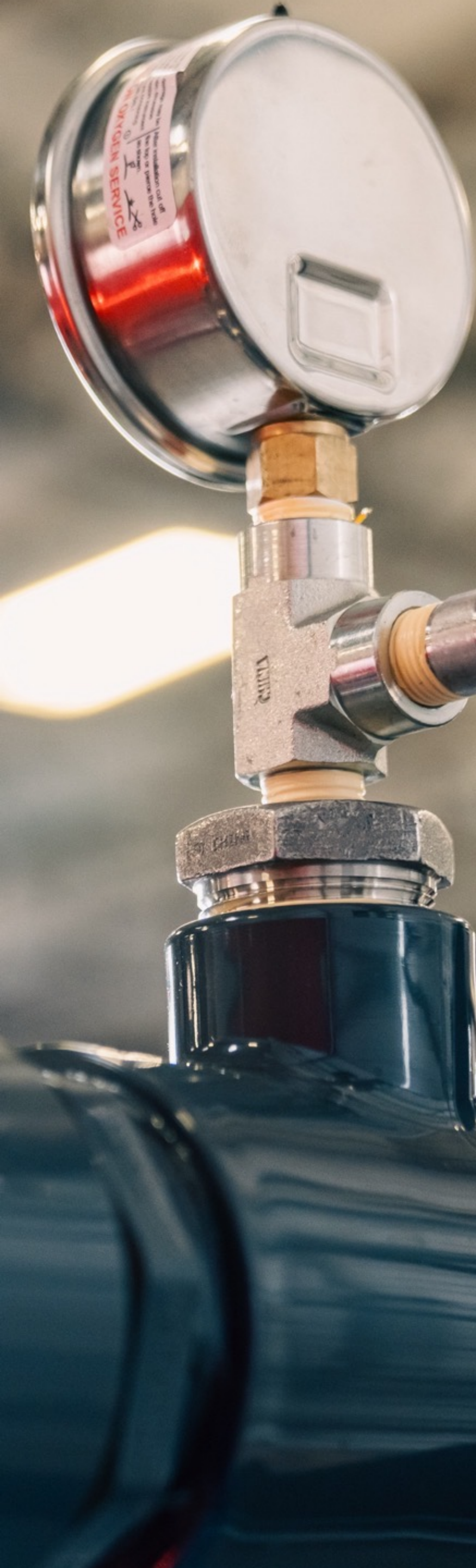
SENTRY™ Inlet Stabilizer Dampeners stabilize pressure and fluid flow on the pump inlet side, preventing water hammer and eliminating acceleration head loss to extend the service life of pump diaphragms and inlet system components.

## **AODDampener™**

These cost effective 316L stainless steel pulsation dampeners are designed and pre-sized for AODD pump applications and feature a unique fully automatic air control that reduces air consumption to save on energy costs.

## **Hybrid Dampener & Back Pressure Valve**

The patented Hybrid Valve™ combines the steady flow control of a pulsation dampener with the regulation of a back pressure valve in a single unit that outperforms systems using a pulsation dampener in series with a back pressure valve.



# Diaphragm Seals

SENTINEL™ Diaphragm Seals, also referred to as gauge guards, gauge isolators or chemical seals, employ a chemically resistant diaphragm to isolate and protect system instrumentation from corrosive process fluids, freezing and slurries.

# Valves

## **Back Pressure & Pressure Relief Valves**

Redesigned from the inside out, SENTINEL™ Back Pressure Valves and Pressure Relief Valves with patented flow stabilization technology deliver improved flow, extend valve service life, and eliminate dreaded valve chatter.

## **Automatic Degassing Valves**

SENTINEL™ Degassing Valves automatically vent gases and vapors released from chemicals commonly used in metering/ dosing applications that are prone to outgassing and chemicals that produce hazardous vapors at pump startup.



# Calibration Columns

SENTINEL™ Calibration Columns provide a simple and accurate method for measuring and calibrating pump flowrates in chemical dosing applications. Calibration columns are installed on the suction line of the pump with the top of the column vented back to the supply tank or drain. Using isolation valves, the column is filled with process fluid from the supply tank and drawn down in a timed, one minute test.

# Injection Quills

SENTINEL™ Injection Quills are designed to safely and efficiently disperse chemicals into process pipelines. Chemicals are injected directly and evenly into the center of the process flow where flow velocity is highest, avoiding chemical contact with pipe walls and ensuring more even mixing with the process fluid.



# Leak & Spill Prevention

## **SPILLSTOP™**

The fully pneumatic SPILLSTOP system safely captures leaked product and automatically shuts down failed AODD pumps to avoid costly product loss, prevent hazardous spills, and minimize system downtime.

SPILLSTOP can also be equipped with an optional warning alarm whistle, pneumatic-to-electric switch to power warning lights or connect to a SCADA panel, and additional pump shutoff valves for multiple pumps, high suction tank applications, and/or backup pump startup.



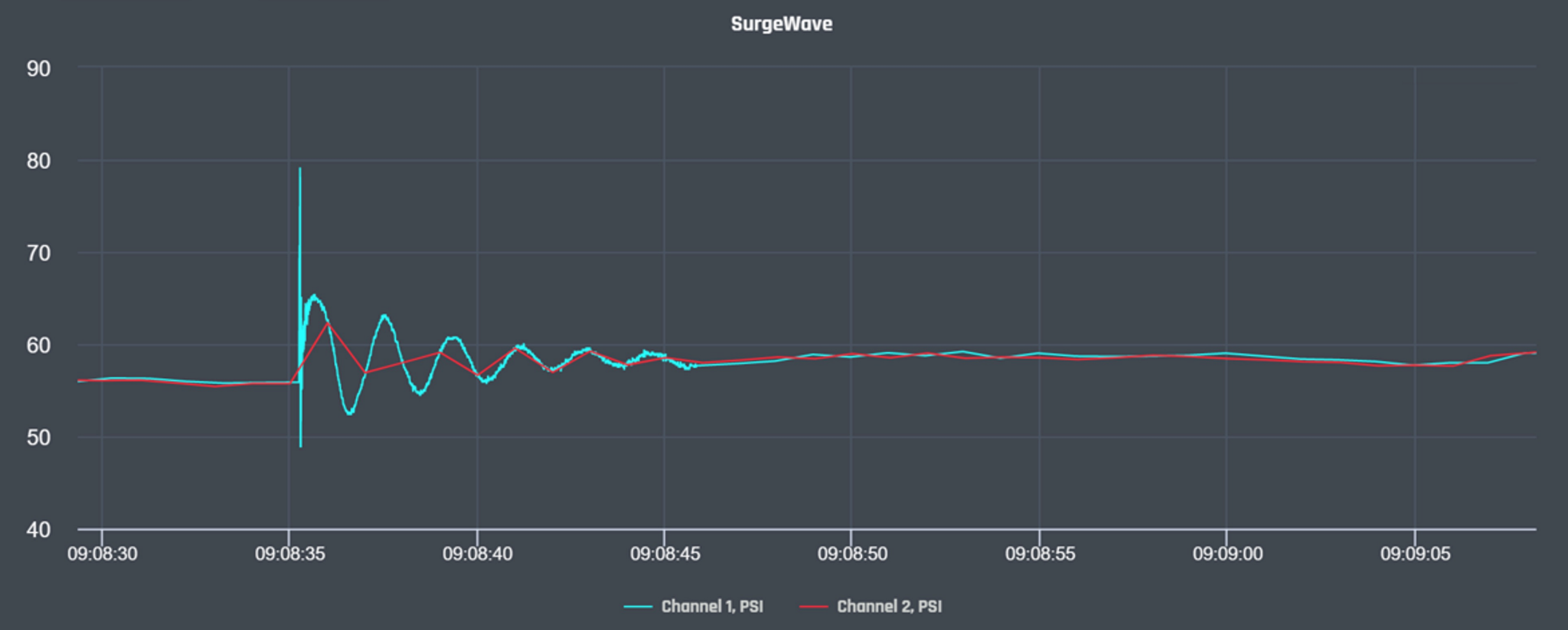
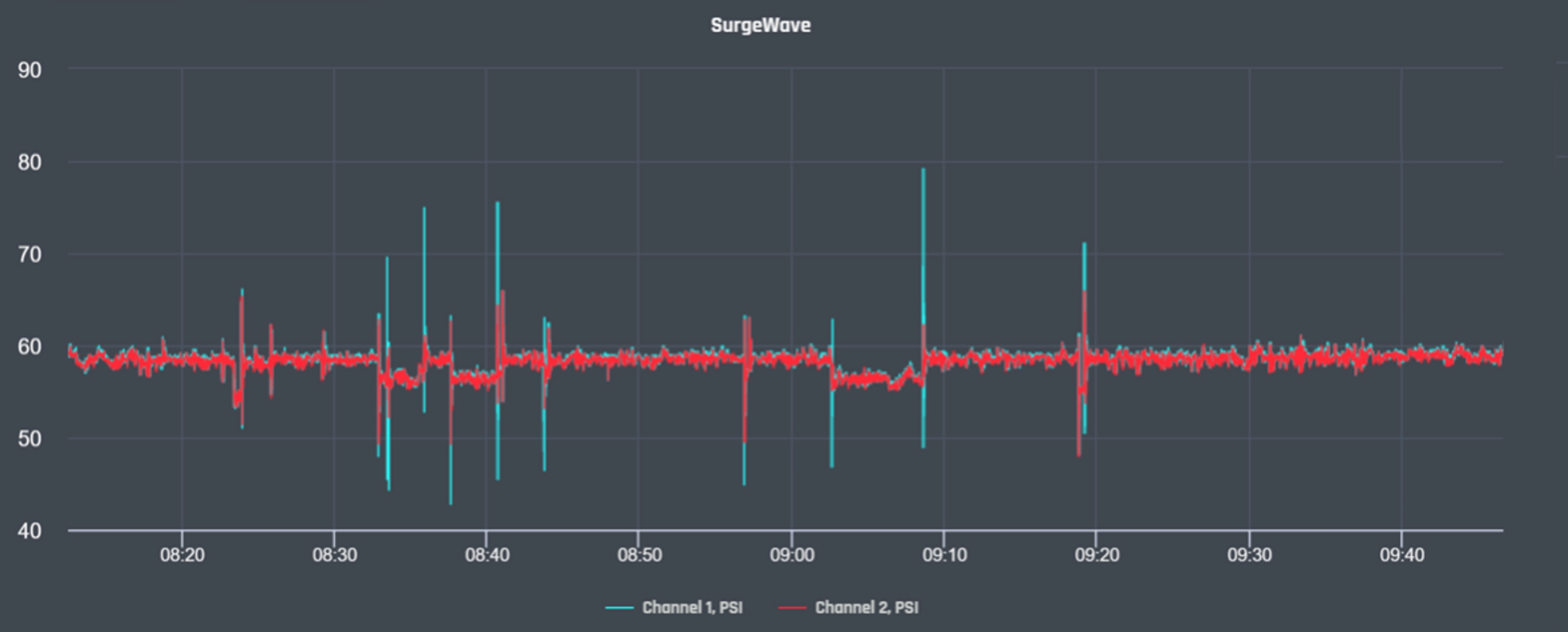
# Surge Vessels

Customizable hydropneumatics vessels designed for surge protection, pressure regulation, storage, and pump control. They are tailored to various system applications.

**Bladder Vessels**

**Compressor (Air/Water)**

**Dipping Tube**



# Transient Pressure Monitoring

Blacoh's patented SurgeWave™ addresses the need for pipeline operators and maintenance engineers to detect and record transient pressure events occurring in water, wastewater, and petroleum/chemical pipelines.

The system is unique in that it employs a system of dynamic pressure transducers and digital technology to monitor pipelines for indefinite periods of time.

When a transient such as a pressure spike or water hammer event is detected, the system activates a high speed data recorder to record the event up to 100 times per second.



# Success Stories



GE  
Oil & Gas

GE Oil & Gas was developing subsea membrane-based water injection systems for improved oil recovery. In laboratory tests, water was pressurized to 4500 psi with a reciprocating triplex plunger pump. The pressure pulsation was reduced to an extremely precise 2 psi (0.14 bar) with the installation of a Blacoh XPH high pressure dampener, enabling reliable testing and validating performance.

# Success Stories



Dunn-Edwards Paints required a steady and precise flow in disperser tanks for a new manufacturing facility. Blacoh pulsation dampeners were installed on both the inlet and discharge side of the facility's AODD pumps to improve flow, extend pump diaphragm life, protect piping and prevent spills.



Blacoh University is an e-learning resource dedicated to the discovery, development, and application of knowledge relating to fluid control processes across a variety of industries. Take advantage of white papers, articles, videos, and many other resources relevant to fluid control professionals.

**Typical Wastewater Treatment**

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graph LR; A[Screening] --> B[Grit Removal]; B --> C[Primary Clarifier]; C --> D[Aeration Basin]; D --> E[Secondary Clarifier]; E --> F[Disinfection]; C --> G[Primary Sludge]; G --> H[Sludge Thickening]; H --> I[Anaerobic Digestion]; D --> J[Return Activated Sludge]; J --> D; E --> K[Water for Reuse]; I --> L[To Dewatering];
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CINE



Stay informed, inspired, and entertained.



Blacoh Dampeners: A Competitive Analysis



Team Blacoh: Love What You Do



How to Properly Charge a Dampener - INTRODUCTION

How To Properly Charge A Dampener - INTRODUCTION



Blacoh Bulldogs



Don't Pump Without Us.