

# SURE SEAL



## SURE SEAL SV SERIES SAMPLING SYSTEM VALVES



SAFER.



CLEANER.



GREENER.

**opw**® **Engineered Systems**  
PART OF OPW FLUID TRANSFER GROUP  
A DOWER COMPANY

### Primitive Method: Spigot-and-Bucket

- Excess waste product
- Potential environmental hazard
- Hazmat waste removal costs
- Transport costs related to removal and replacement of drums

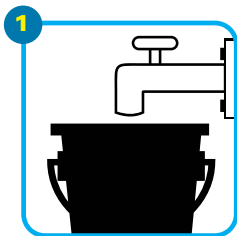


### Modern Method: Sampling System Valve

- **Safer:** Reduces risk of liquid splash back, temperature burn and/or harmful vapor inhalation and slip-and-fall accidents by operators
- **Cleaner:** Minimizes process liquid exposure to atmosphere for true, clean, representative sample
- **Greener:** Minimizes release of process fugitive emissions; minimizes liquid and vapor leaks that could cause potential environmental contamination

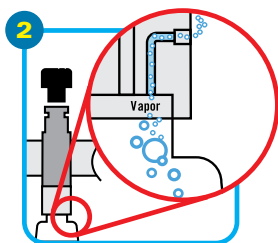
## Existing Liquid Sampling Methods

Existing methods of obtaining representative samples of process liquids range from the primitive Spigot-and-Bucket method to modern Sampling System Valve methods with bottles and septum to Dry-Disconnect processes.



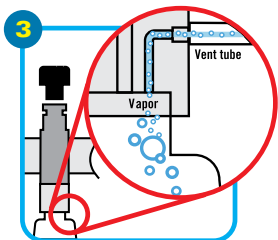
### 1 Spigot and Bucket

- Most common and primitive method
- Maximum process liquid exposure to atmosphere; quality and integrity of sample may be compromised
- **Least Safe:** Personnel may be exposed to safety hazards due to direct contact with process liquid and vapors
- **Least Clean:** Liquid spills and leaks create potential work site hazards (e.g., wet floors can cause slippage; environmental contamination)
- **Least Green:** Does not capture fugitive emissions; vapors released into atmosphere; could also cause additional environmental contamination



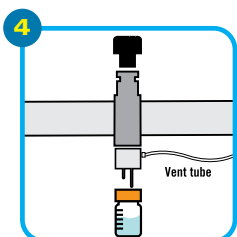
### 2 Sample Bottle (for non-toxic applications)

- Ideal method of sampling non-toxic process liquids (e.g., milk, shampoo and tomato juice) where vapor venting location is not critical
- Minimizes process liquid exposure to atmosphere; preserves quality/integrity of sample



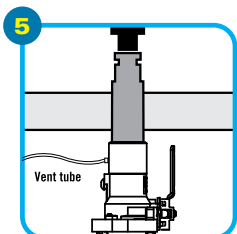
### 3 Sample Bottle (for toxic applications)

- Ideal for venting process liquids with some level of toxicity or fugitive emissions
- Venting potentially harmful vapors away from people and operators back into process, scrubbers or flares
- Minimizes process liquid exposure to atmosphere; preserves quality/integrity of sample



### 4 Sample Bottle with Septum

- Ideal for handling hazardous/toxic process liquids in facilities or work site environments where the release of fugitive emissions or liquid leakage is unacceptable



### 5 Zero Tolerance

- Double shut-off dry-disconnect method
- Ideal for handling the most hazardous and/or highly toxic process liquids (e.g., highly chlorinated chemicals)
- **Best application:** facilities or work site environments where there is *Zero Tolerance* for fugitive emissions or liquid leakage

## SAMPLING VALVE ADVANTAGES VERSUS SPIGOT AND BUCKET



Reduces risk of liquid splash-back or temperature burn from sudden pressure release

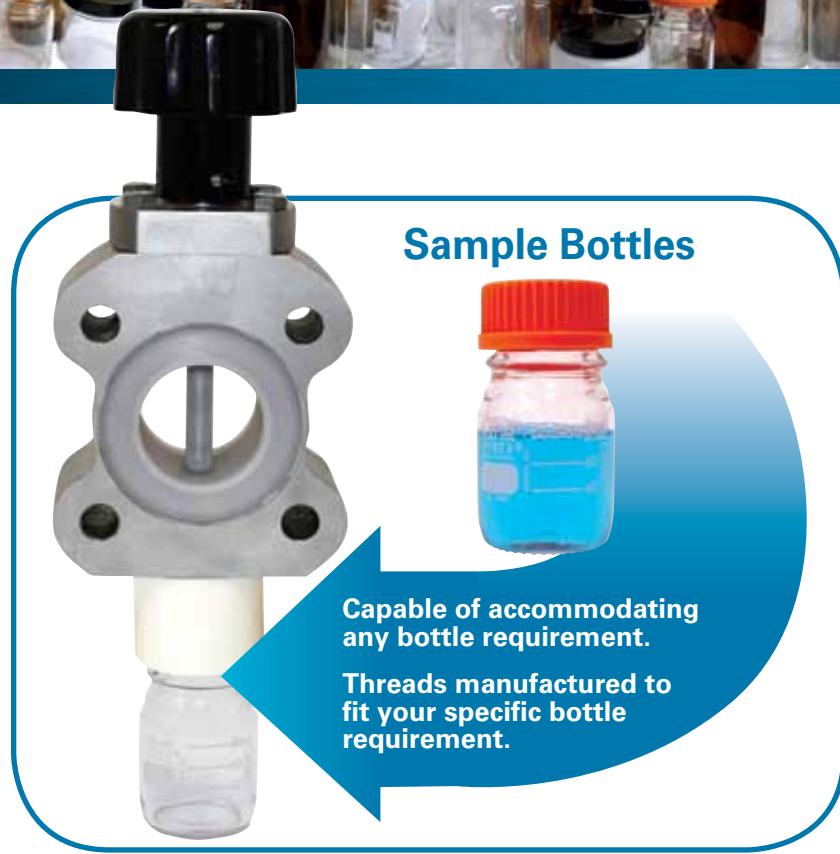


Reduces risk of potentially harmful vapor Inhalation by operator



Minimizes leaks that can cause potential environmental contamination or slip-and-fall accidents



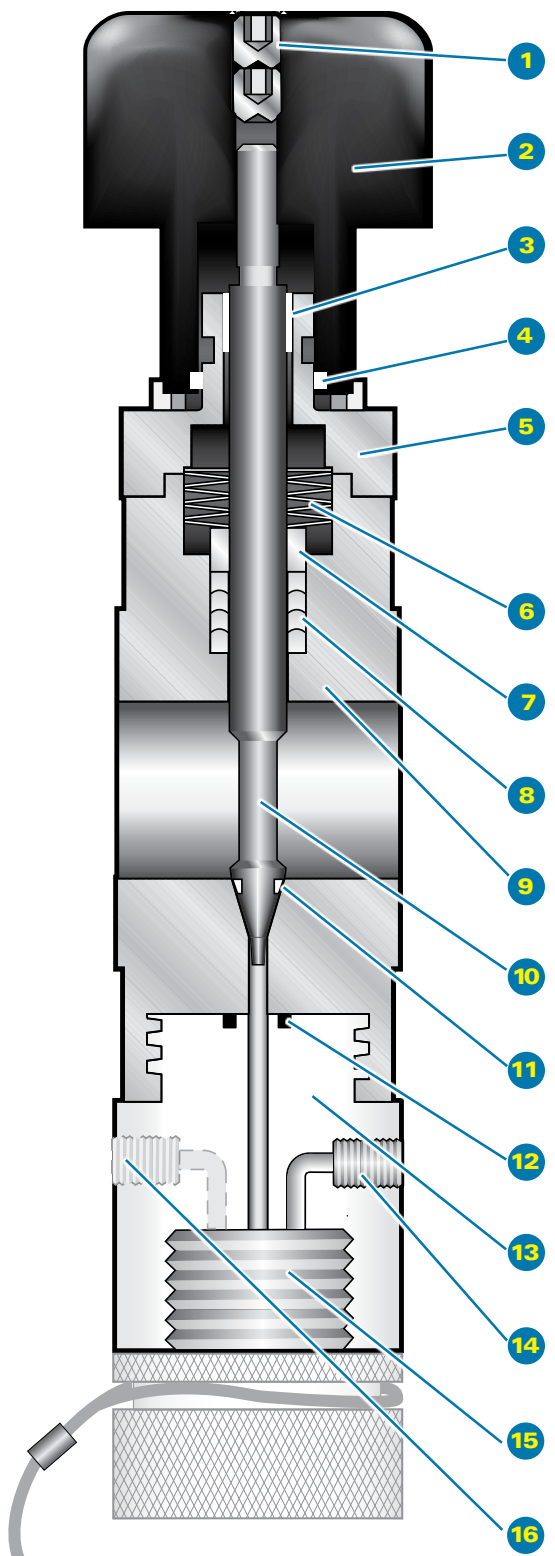


### Sample Bottles

Capable of accommodating any bottle requirement.  
 Threads manufactured to fit your specific bottle requirement.

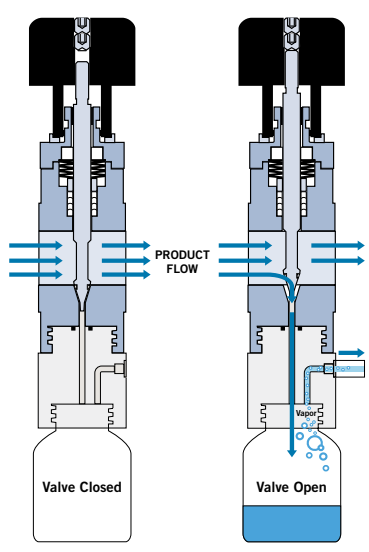
### Sample Valve

Standard Stainless Steel shown below  
 (Style, design and configuration may change based on materials of construction)



**PRINCIPLES OF OPERATION:** The SV/SB series in-line sampling system valve is engineered to effectively collect representative sample of hazardous process media. The dead space free design can be installed in both horizontal and vertical piping, thereby allowing the media to constantly flow through the valve and around the conical spindle. Sample bottles – either open top, sealed with septum, or sealed with dry disconnects – can be directly attached beneath the valve to facilitate the sampling process.

- Direct representative samples from the process piping without requiring flushing
- Size range 1" to 6" (DN 25 to DN 150)
- 100% bubble-tight shut-off and zero stem leakage tested per the API 598 specifications
- Economical, field-replaceable components
- Available with Knob handle, Safety Spring-to-Close handle or Pneumatic Actuator
- Temperature rating: -4° F to 400° F (Soft Seated)
- Valves available to mount in ANSI 150# and 300# flanges
- Bottle adaptors can be machined to fit customer-supplied bottles or supplied with bottles



## Features/Benefits

### 1 Dual Stainless Steel Set Screws

- Locks knob handle into place against vibration in process lines
- Limits travel of valve stem; controls sample speed
- Pre-set from factory – allows user to adjust sample speed

### 2 Nylon-Encased Stainless Steel Knob

- Durable
- Corrosion-resistant
- Non-slip grip
- Lighter weight versus solid stainless steel
- Safety Spring-to-Close Handle and Pneumatic Actuators also available

### 3 igus® Stem Bearing

- Self-lubricating (no maintenance required)
- Provides for smooth, easy stem operation
- Chemically resistant
- Durable

### 4 Fluorocarbon Rubber O-Rings

- Protects the stem and bearing from external forces (water, moisture and debris)
- Provides secondary level of protection against emissions and leaks from the process flow
- Promotes long service life

### 5 Bonnet Assembly(\*)

- Corrosion-resistant
- Made from same material as valve body
- With fluorocarbon gasket

### 6 Belleville Springs (Washers)

- Provides level/live loading for the packing gland; a better alternative than coil springs
- More compact than coil springs; provides better sealing protection by keeping load evenly distributed on packing glands
- Continues to provide seal load integrity even if washer breaks (something coil springs cannot do)
- Black Oxide Coated Steel (standard) – improves corrosion resistance, lubricity, anti-galling properties
- Inconel® Alloy – for highly corrosive and high-temperature applications

### 7 Packing Gland Bushing(\*)

- Keeps pressure evenly distributed on packing gland
- Corrosion-resistant

### 8 Live-Loaded Packing Gland with PTFE Packing

- Provides maximum protection against fugitive emissions and liquid leakage
- Optional graphite packing available for higher temperatures
- Optional bellows stem seal also available

### 9 Body(\*)

- Superior durability
- Corrosion-resistant

### 10 Stem(\*)

- Superior durability
- Corrosion-resistant

### 11 Stem Seal with Molecular Enhanced PTFE

- Molecular-enhanced for greater durability
- Provides better resistance against corrosion

### 12 PTFE Encapsulated Fluorocarbon O-Ring

- Primary seal for bottle adaptor to body
- Chemically resistant

### 13 PTFE Bottle Adaptor

- Can be machined to any bottle thread configuration
- Chemically resistant

### 14 FNPT Vent Connection

- Vents vapors away from operator
- 1/8" or 1/4" FNPT standard; can be machined to other thread configurations

### 15 Adaptor Plug (optional)

- Protects bottle adaptor threads; can be used for double-block applications

### 16 Purge Port (optional)

- For purging sample bottle of moisture or air to ensure purity of sample

## (\*) MATERIALS OF CONSTRUCTION

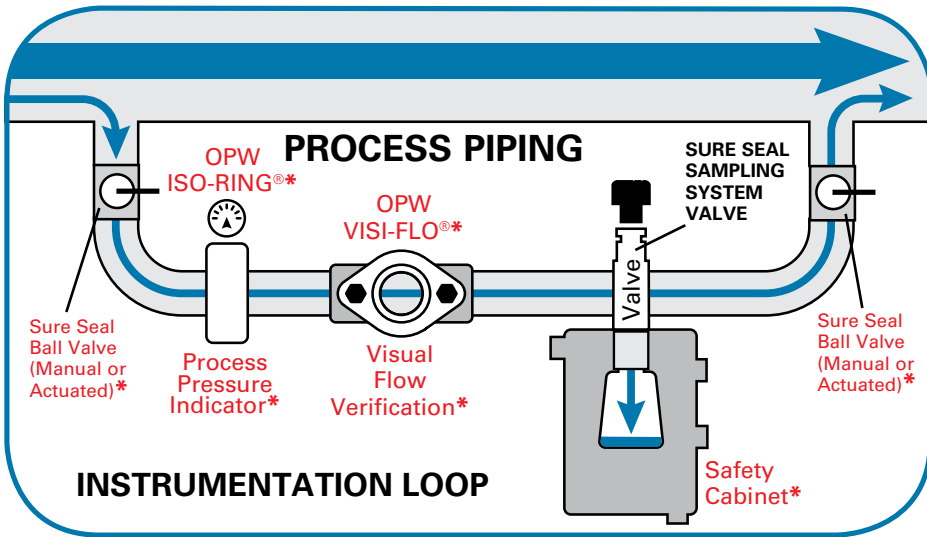
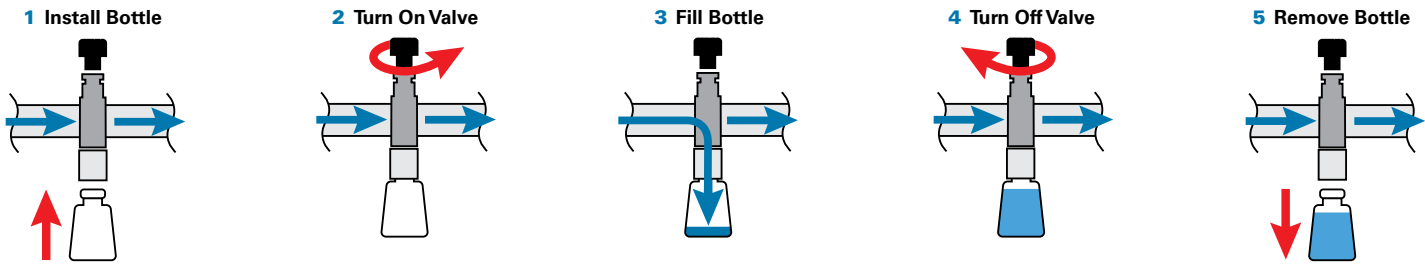
<b>BODY</b>	<ul style="list-style-type: none"> <li>• Stainless Steel</li> <li>• Hastelloy®</li> <li>• Alloy 20®</li> <li>• Monel®</li> <li>• PVDF</li> <li>• PFA lined (Stainless Steel)*</li> </ul>	<b>NOTE:</b> body, stem, bonnet and bushings will be made of the same materials
<b>STEM</b>		
<b>BONNET</b>		
<b>BUSHING</b>		

\* PFA-lined valves are supplied with PFA-lined stainless steel body and stem; bonnet and bushings are stainless steel but are not PFA lined.

PFA-lined valves are supplied with fluoroelastomer stem seal.

**Testing:** Each individual valve is tested for zero stem leakage and bubble-tight shut-off in accordance with the API 598 testing specifications. All PFA (PTFE) lined valves are spark tested to 20,000 volts to assure the integrity of the lining. Factory supplied mill test certificates are available upon request.



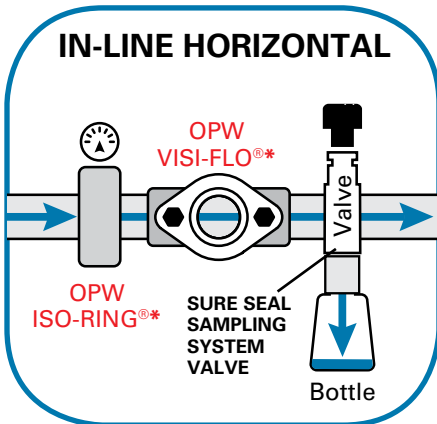


**\*NOTE:** Equipment indicated in red represents optional equipment that can improve overall safety and efficiency of your sampling process

## Typical Configurations

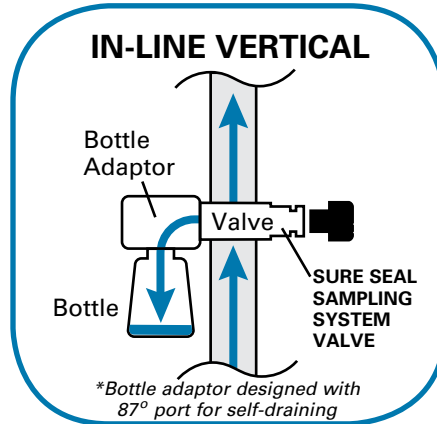
### Instrumentation Loop

- Can be an integral part of a continuous process or throttle-valve controlled as needed
- Ideal for large process piping applications
- Enables liquids to be taken directly from the instrumentation loop for a true, clean, representative sample
- ISO-Ring® provides reliable, accurate pressure readings; allows user to ensure process pressure is within sampling system safety limits
- VISI-FLO® Sight Flow Indicator provides a quick, reliable, cost efficient and qualitative method of verifying flow rate, direction, color and clarity of process liquid



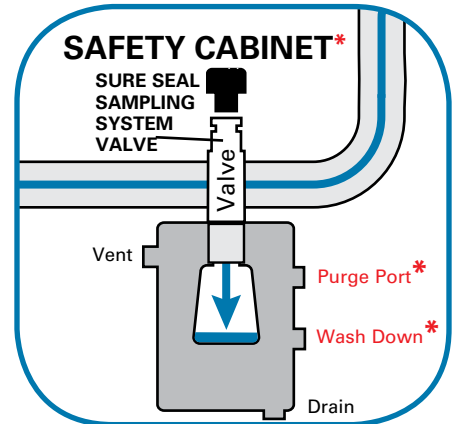
### In-Line Horizontal

- Allows for collection of representative samples directly from a 1" to 6" pipe into a sample container without requiring flushing



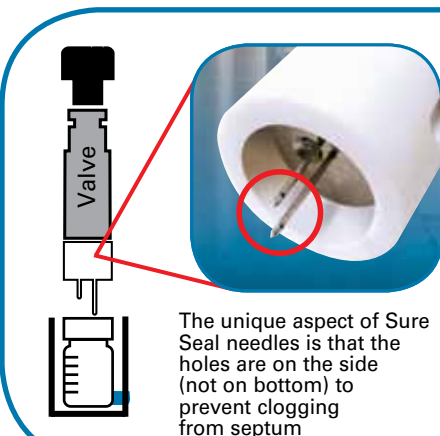
### In-Line Vertical

- Allows for the collection of representative samples directly from a 1" to 6" pipe into a sample container without requiring flushing



### Safety Cabinet

- Helps protect operator from hazardous and/or toxic liquids as well as helps shield process liquid from potential atmospheric contamination

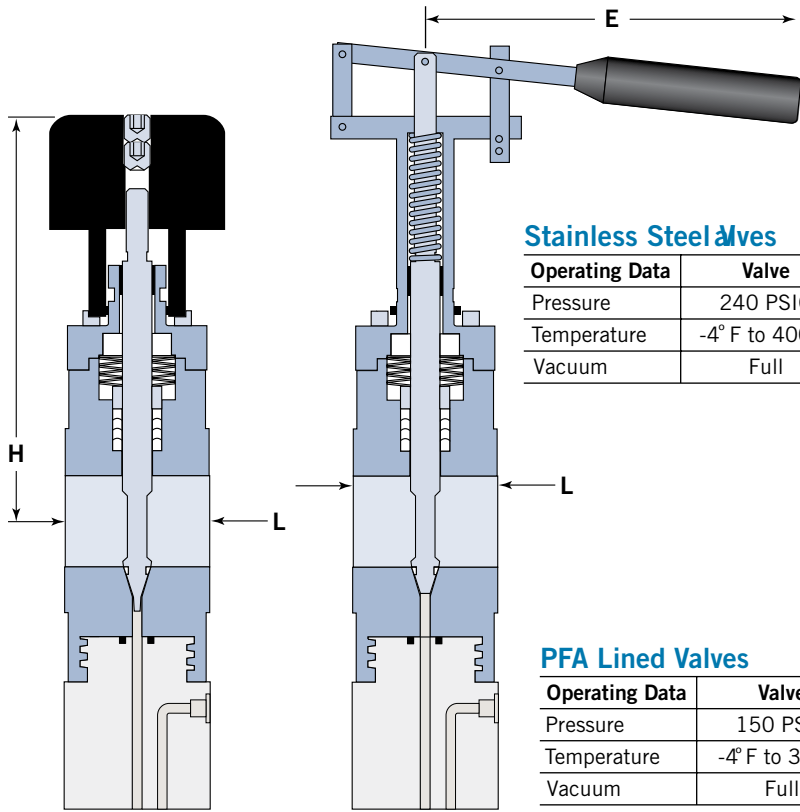


### Septum System

- Representative samples are captured in a jar (no threading) through a pair of needles puncturing the septum top
- One needle allows liquid sample to fill jar; the other needle is used for venting
- Field-replaceable needles made of standard stainless steel; other materials available
- Bottle basket made of polypropylene; permits smooth rotation of bottle for quick, easy, secure twist-and-lock

- Supports bottle during sample collection





### Stainless Steel Valves

Operating Data	Valve
Pressure	240 PSIG
Temperature	-4° F to 400° F
Vacuum	Full

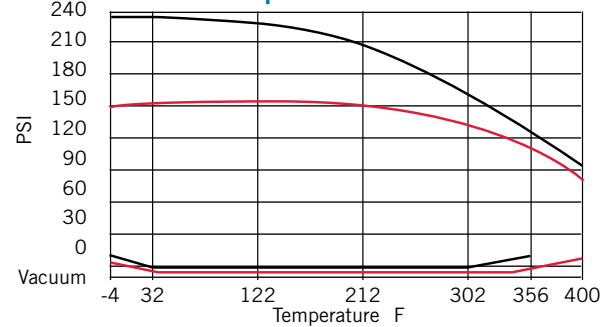
### PFA Lined Valves

Operating Data	Valve
Pressure	150 PSIG
Temperature	-4° F to 350° F
Vacuum	Full

### Dimensional Data

Size	150# Wafer		"Spring to Close" Handle
	L	H	E
1"	2.36	6.30	9.50
1.5"	2.36	6.50	9.50
2"	2.36	6.70	9.50
3"	2.36	7.00	9.50
4"	2.36	7.20	10.50
6"	2.36	7.50	10.50

### Pressure/Temperature Curve



## Sure Seal SV Series Sampling System Valve Ordering Information

SERIES	SIZE	BODY STYLE	BODY MATERIAL	STEM SEAL	OPERATOR	ACCESSORIES
SV/SB	6	W1	M	10	H	BA

**Series:** SV/SB – Sample Bottle  
SV/SBS – Sample Bottle with Septum

**Size:** 1" to 6"

**Body Style:** F1 - 150# Flanged (\*)  
F3 - 300# Flanged (\*)  
W1 - 150# Wafer  
W3 - 300# Wafer

**Body Material:** S - 316L/CF8M  
M - Monel®  
C - Hastelloy®  
A - Alloy 20®  
P - PFA Lined/316 SS (\*\*)  
K - PVDF

**NOTE:** (\*) Available only for stainless steel or alloy valves  
(\*\*) Additional configurations, materials, sizes and options available upon request

**Stem Seal:** 10 - PTFE Chevron® V Packing  
15 - Graphite Packing  
20 - Bellows Stem Seal

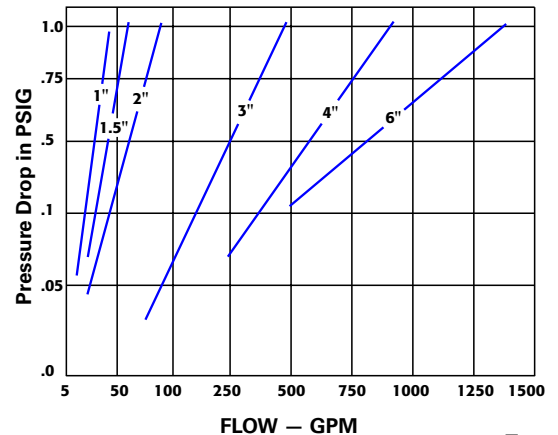
**Operator:** H - Knob Handle  
S - Safety "Spring-to-Close" Handle  
P - Fail-Closed Pneumatic Actuator

**Accessories:** SC - Safety Cabinet  
BA - Horizontal Bottle Adaptor  
VBA - Vertical Bottle Adaptor  
HJ - Heating Jacket  
ABS - Spring Loaded Adjustable Bottle Support  
NA - Needle Adaptor  
VNA - Vertical Needle Adaptor  
AP - Adaptor Plug

### Sure Seal Sample Valves Flow Coefficients

(Flow of Water at 60°F for Cv or 20°F for Kv)

Valve Size	Flow Factor Kv (m³/hr per bar)	Flow Coefficient Cv (GPM per psi)
1"	36	42
1.5"	50	58
2"	85	99
3"	420	487
4"	800	928





All Sure Seal and OPWFTG Process Control and Measurement Products are designed and engineered to maximize the safety and well-being of people when handling hazardous liquids as well as to minimize impact on the environment. Our goal is to invest in the products, systems, materials and operational infrastructure to align with the social responsibilities of today's businesses and with our own charter to be a good corporate citizen.



## OPW Fluid Transfer Group – Providing SAFER, CLEANER,



### Sight Flow Indicators

OPW's comprehensive line of site flow indicators provides a quick, reliable, cost efficient and qualitative way to verify flow rate, direction, color and clarity in fluid lines. Readings are visible through a glass viewing lens.

#### They can be deployed either:

- Individually at critical points along fluid lines where changes, interruptions or contamination of fluids are likely to occur;
- Together in banks where the simultaneous monitoring of multiple fluid lines is necessary.

Available in a variety of sizes, styles and materials (e.g., carbon steel, stainless steel, bronze).

#### Configurations:



Threaded



Flanged

#### Indicator Options:



Propeller



Bi-Directional Flapper



Bi-Directional Plain



### ISO-Ring®

This simple, yet remarkably powerful device is designed to ensure that process flow is smooth and uninterrupted and that pressure readings are consistently reliable and accurate.

#### They are deployed:

- At points along process piping or instrumentation loop, helping to isolate gauges or pressure switches from solids or slurries.

Gone are the days when solids or slurries from the process flow plug the pressure-sensing mechanism or clog the access port on the diaphragm seal. The ISO-Ring® uses a flush mounted flexible inner cylinder, behind which is a clean, captive liquid. The device exerts pressure through the flexible cylinder to the captive liquid as process liquid flows through the pipe.

#### Direct



#### Diaphragm



#### ISO-Ring®



### Lined Ball Valves

Sure Seal's LBV series are Full-Port, lined ball valves. Designed to minimize pressure loss and maximize flow capacity.

#### They are deployed:

- Throughout process piping wherever reliable flow control is required.

Providing bubble-tight shut-off and requiring minimal maintenance, the LBV series helps lower energy and pumping costs. A separate lined ball and stem allows the ball to float, which prevents side loading, a common source of stem leaks.

Capable of withstanding high-pressure situations, the LBV series also provides the peace-of-mind assurance of a blowout-proof stem.

All Sure Seal LBV Series lined ball valves are subjected to a rigid statistical quality assurance process to assure defect-free product quality. Each valve is individually tested in accordance with API 598 specifications and are spark-tested with 30,000 volts to ensure lining integrity. Each valve is serialized for quick identification and traceability. Mill Test Certifications are available upon request.



## GREENER Process Control & Measurement Solutions Worldwide



### Lined Butterfly Valves

Sure Seal's LBF lined butterfly valves feature a superior encapsulated valve design non-wetted, 360-degree, radially loaded, elastometric energizer to ensure absolute bubble-tight shut-off, as well as a state-of-the-art mechanical shaft-sealing mechanism featuring Belleville spring technology.

#### They are deployed:

- In demanding applications that require control and isolation of corrosive, high-purity and abrasive process media.

#### Ideally suited for chlorine service, the LBF series:

- Offers disc swing clearance compatible with PTFE and other fluoropolymer-lined piping systems as well as other metallic, lined and non-metallic piping systems. No need for spacers during installation.

Sure Seal lined butterfly valves feature a superior encapsulated valve design. The liner is made from molecular enhanced PTFE to ensure the densest seat possible. Then, it is machined to strict tolerances. The one-piece disc/stem has a 3 mm thick precision-molded PFA locked in liner, encapsulating the wetted surfaces of the duplex stainless steel core. This eliminates the permeation and delamination commonly found in lined butterfly valves.



### Sure Torque Series ST Actuators

The Sure Torque Series ST is compact and uncomplicated in its design. With over 14 sizes and 90, 120, 135, 180, 240 and 270 rotation, these actuators can accommodate any situation.

#### They are deployed:

- Throughout process piping on valves requiring actuated flow control

The Sure Torque Series ST can be field-converted from double acting to single return by inserting the correct number of spring cartridges into the double-acting unit. This remarkably easy conversion eliminates bulky housing extensions, resulting in a savings of both weight and space.

Preloaded self-contained spring cartridges are completely contained before release of end cap screws, ensuring safe installation and removal. Internal porting eliminates costly external tubing. Accessory mounting aligns with NAMUR standards; variety of accessories available. Direct-mount solenoids available in NEMA 4, 7 and 9. Positioners supplied to receive 3 - 15 psi (.207-1.034 bar) or 4-20 mA input control signals. Declutchable manual-gear overrides available for actuators of all sizes.



### Dry Disconnects

#### OPW EPSILON™

EPSILON™ provides chemical processors with dry-disconnect couplings that allow the safe connection and disconnection of flexible hoses. Featuring double-nested ball valve technology in a modular design, including interlocking handles to prevent accidental uncoupling. The EPSILON™ reduces worker exposure to chemicals as well as chemical releases into the environment. Engineered as a single unit, EPSILON™ provides space savings and greater design flexibility.

#### OPW Drylok™

Drylok™ safely transfers hazardous, corrosive, volatile liquids where product loss is a problem. An interlocking handle prevents uncoupling when valve is open, helping avert accidental spills. The unit's flat face minimizes fluid loss and reduces exposure to risk.

#### OPW Kamvalok®

The "Original" Dry Disconnect specified and used worldwide.

These dry-disconnect couplings help prevent spillage during connection or disconnection.

#### They are deployed:

- At liquid transfer points where there is potential for product loss (e.g., petroleum products, solvents, ag-chemicals, vegetable oils, detergents, many acids and caustics).



## Frequently Asked Questions

### Why choose Sure Seal sampling system valves?

Sure Seal sampling system valves are safer, cleaner and greener. They feature a direct in-line closed loop design engineered to collect representative samples direct from process piping or instrumentation loop without requiring flushing.

The design allows for the valves to be installed in both horizontal and vertical piping systems. The Sure Seal system offers open bottle sampling, needle adaptors for sealed septum bottles, or dry-disconnect systems. Safety cabinets and specially designed 90-degree bottle adaptors can be used in horizontal or vertical piping.

### What is the size range of Sure Seal sampling system valves?

Standard sizes range from 1" to 6" in both wafer and flanged-style valves. Special connections and larger sizes may be available upon request.

### In what materials of construction are Sure Seal sampling system valves available?

Valve bodies are available in these materials of construction:

- Stainless Steel
- Hastelloy®
- Alloy 20®
- Monel®
- PVDF
- PFA lined (Stainless Steel)\*

\* PFA-lined valves are supplied with PFA-lined stainless steel body and stem; bonnet and bushings are stainless steel but are not PFA lined.

PFA-lined valves are supplied with a Fluoroelastomer stem seal.

### How do you operate the Sure Seal sampling system valve?

All valves are available with several methods of operation: Knob Handles, Safety "Spring-to-Close" Handles and Fail-Closed Pneumatic Actuators.

### What design and testing criteria are applicable to Sure Seal sampling system valves?

All sampling systems are specifically designed per ASME/ANSI B 16.10 and ASME/ANSI B 16.5.

All sampling system valves are individually tested for absolute bubble-tight shut-off and zero stem leakage in accordance with the API 598 testing specifications. Most sample valves are rated from full vacuum to 150 psi. The minimum/maximum temperature ratings depend on the materials of construction. Each PFA lined sample valve is spark-tested to 20,000 volts to ensure the integrity of the lining.

### Can we rely on the environmental integrity of the Sure Seal sampling system valve?

Sure Seal sampling system valves are available with spring-loaded mechanical shaft seals (PTFE Chevron® Style V Packing or Graphite) or a bellow seal with a secondary sealing system. PFA lined valves are also available with (TFM) PTFE bellows seal and a secondary O-ring seal.

### Can we use the Sure Seal sampling system valve if our process polymerizes?

Heating and cooling jackets can be made available for any temperature related process. Special orifices and bottle adaptors are also available.



OPW Fluid Transfer Group (OPWFTG), part of Dover Corporation (NYSE:DOV), is comprised of market-leading operating companies, each dedicated to designing, manufacturing and distributing world-class solutions for the safe handling and transporting of hazardous bulk products. In addition to these companies, OPWFTG has manufacturing plants in North America, Europe, Brazil and India; and sales offices in Singapore, and China.

Throughout the world, OPWFTG companies are hard at work ensuring the safe processing, loading, transporting and unloading of hazardous bulk products and safeguarding against costly petroleum and chemical spills, tank overfills and fugitive vapor emissions. Whether your need is in the chemical plant, at the terminal loading rack, or outfitting a fleet of rail tank cars, cargo tanks or dry-bulk trailers, OPWFTG systems set the standard for safety, performance and peace-of-mind assurance in the most rigorous and demanding applications. If the safe, profitable handling of hazardous liquids and dry bulk commodities such as gasoline and diesel, chlorine, chlor-alkali products, LPG, acids, cement, flour and starch, among others, is your concern, trust OPWFTG.

## EXPERT SOLUTIONS FOR THE SAFE HANDLING & TRANSPORTING OF HAZARDOUS BULK PRODUCTS

	Applications	Processing	Load	Transporting		Unload
<b>PETROLEUM</b>	<ul style="list-style-type: none"> <li>Gasoline</li> <li>Ethanol</li> <li>Alcohols</li> <li>Fuel Oil</li> <li>LPG</li> <li>Diesel</li> <li>Biodiesel</li> </ul>	<ul style="list-style-type: none"> <li>Bellow Sealed Valves</li> <li>Sample Valves</li> <li>Lined Ball Valves</li> <li>Lined Butterfly Valves</li> <li>Industrial Valves</li> <li>ISO Rings</li> <li>Sight Flow Indicators</li> <li>Globe Valves</li> <li>Swivels</li> <li>Dry Disconnects</li> </ul>	<ul style="list-style-type: none"> <li>Loading Arms</li> <li>Couplers</li> <li>Rack Monitors</li> <li>Dry Disconnects</li> <li>API Coupler</li> <li>Swivels</li> </ul>	<b>Cargo Tanks</b> <ul style="list-style-type: none"> <li>Manholes</li> <li>Vapor Vents</li> <li>Electronics</li> <li>Internal Valves</li> <li>API Adaptors</li> <li>Sealed Parcel</li> <li>Pneumatic Controls</li> <li>Manifold Systems</li> </ul>	<b>Rail Tank Cars</b> <ul style="list-style-type: none"> <li>Pressure Relief Valves</li> <li>Plug Valves</li> <li>Ball Valves</li> <li>Level Measurement</li> <li>Autoloks</li> <li>Kamvaloks</li> <li>Dryloks</li> <li>Rupture Disc Devices</li> <li>Angle Valves</li> </ul>	<ul style="list-style-type: none"> <li>Drylok Couplers</li> <li>Adaptors</li> <li>Delivery Elbows</li> <li>Vapor Recovery Elbows</li> <li>Swivels</li> </ul>
<b>CHEMICALS</b>	<ul style="list-style-type: none"> <li>Chlorine</li> <li>Acids &amp; Bases</li> <li>Amines</li> <li>Anhydrous Ammonia</li> <li>Propylene</li> <li>Butadiene</li> <li>Hazardous Liquids</li> </ul>	<ul style="list-style-type: none"> <li>Bellow Sealed Valves</li> <li>Sample Valves</li> <li>Lined Ball Valves</li> <li>Lined Butterfly Valves</li> <li>Industrial Valves</li> <li>ISO Rings</li> <li>Sight Flow Indicators</li> <li>Globe Valves</li> <li>Swivels</li> <li>Dry Disconnects</li> <li>Quick Disconnects</li> <li>Epsilon</li> </ul>	<ul style="list-style-type: none"> <li>Loading Arms</li> <li>Autoloks</li> <li>Kamvaloks</li> <li>Dryloks</li> <li>Loading Manholes</li> <li>Valves</li> <li>Actuators</li> <li>Swivels</li> <li>Epsilon</li> </ul>	<b>Cargo Tanks</b> <ul style="list-style-type: none"> <li>Manholes</li> <li>Vapor Vents</li> <li>Electronics</li> <li>Internal Valves</li> <li>Sealed Parcel</li> <li>Epsilon</li> </ul>	<b>Rail Tank Cars</b> <ul style="list-style-type: none"> <li>Safety Valves</li> <li>Plug Valves</li> <li>Ball Valves</li> <li>Level Measurement</li> <li>Autoloks</li> <li>Kamvaloks</li> <li>Dryloks</li> <li>Rupture Disc Devices</li> <li>Angle Valves</li> <li>Epsilon</li> </ul>	<ul style="list-style-type: none"> <li>Loading Arms</li> <li>Autoloks</li> <li>Kamvaloks</li> <li>Dryloks</li> <li>Valves</li> <li>Actuators</li> <li>Safety Breakaways</li> <li>Swivels</li> <li>Epsilon</li> </ul>
<b>DRY BULK</b>	<ul style="list-style-type: none"> <li>Cement</li> <li>Flour/Starch</li> <li>Pharmaceuticals</li> </ul>	<ul style="list-style-type: none"> <li>Industrial Valves</li> <li>Sight Flow Indicators</li> <li>Butterfly Valves</li> <li>Swivels</li> </ul>	<ul style="list-style-type: none"> <li>Loading Arms</li> <li>Aerators</li> <li>Hatch Covers</li> <li>Swivels</li> </ul>	<b>Cargo Tanks</b> <ul style="list-style-type: none"> <li>Manholes</li> <li>Check Valves</li> <li>Hopper Tees</li> <li>Butterfly Valves</li> <li>Aerators</li> <li>Weld Rings</li> </ul>	<b>Railcars</b> <ul style="list-style-type: none"> <li>Manholes</li> <li>Hatches</li> <li>Access Ports</li> <li>Check Valves</li> <li>Hopper Tees</li> <li>Butterfly Valves</li> <li>Aerators</li> <li>Pressure Vacuum Valves</li> </ul>	<ul style="list-style-type: none"> <li>Aerators</li> <li>Butterfly Valves</li> <li>Tank Hatches</li> <li>Pressure Relief</li> <li>Vacuum Relief</li> <li>Temperature Monitoring</li> </ul>
<b>INDUSTRIAL/GENERAL</b>	<ul style="list-style-type: none"> <li>Food Processing</li> <li>Pharmaceuticals</li> <li>Waste Water</li> <li>High-Purity Liquids</li> <li>Breweries</li> <li>Pulp and Paper</li> <li>Steel Processing</li> </ul>	<ul style="list-style-type: none"> <li>Lined Ball Valves</li> <li>Lined Butterfly Valves</li> <li>Sample Systems</li> <li>Sight Flow Indicators</li> <li>ISO Rings</li> <li>Dry Disconnects</li> <li>Swivels</li> <li>Quick Disconnects</li> <li>High-Performance Butterfly Valves</li> <li>Epsilon</li> </ul>	<ul style="list-style-type: none"> <li>Loading Arms</li> <li>Couplers</li> <li>Rack Monitors</li> <li>Swivels</li> <li>Dry Disconnects</li> <li>Quick Disconnects</li> <li>Butterfly Valves</li> <li>Epsilon</li> </ul>	<b>Cargo Tanks</b> <ul style="list-style-type: none"> <li>Manholes</li> <li>Vapor Vents</li> <li>Electronics</li> <li>Weld Rings</li> <li>Hopper Tees</li> <li>Pneumatic Controls</li> <li>Sealed Parcel</li> <li>Dry Disconnects</li> <li>Epsilon</li> </ul>	<b>Rail Tank Cars</b> <ul style="list-style-type: none"> <li>Safety Valves</li> <li>Plug Valves</li> <li>Ball Valves</li> <li>Level Measurement</li> <li>Autoloks</li> <li>Kamvaloks</li> <li>Dryloks</li> <li>Rupture Disc Devices</li> <li>Angle Valves</li> <li>Epsilon</li> </ul>	<ul style="list-style-type: none"> <li>Loading Arms</li> <li>Couplers</li> <li>Rack Monitors</li> <li>Swivels</li> <li>Dry Disconnects</li> <li>Quick Disconnects</li> <li>Butterfly Valves</li> <li>Epsilon</li> </ul>

### Chemical & Industrial Processing Market Unit

- Food Processing
- Chemical Plants
- Petroleum Loading Stations
- Steel Processing, Pulp & Paper
- Waste Water Treatment
- Pharmaceutical
- Breweries
- High-Purity Liquids
- Ethanol Processing
- Biodiesel Processing

### Rail Market Unit

- Pressure & General Purpose Rail Tank Cars
- Dry Bulk Railcars
- Ethanol Rail Tank Cars
- Diesel
- Biodiesel

### Cargo Tank Market Unit

- Gasoline & Diesel
- Dry Bulk
- Ethanol
- Biodiesel



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