



## Sampling Valves (BSV Series)

Sterile, Aseptic and Sanitary Valves for Critical Process Systems



For Biotechnological, Pharmaceutical, Food and Beverage Process Systems

# WHY CHOOSE A CARTEN SAMPLING VALVE?

The Carten BSV Hygienic Series Sampling Valve allows the drug manufacturer to capture samples for characterisation without the risk of contamination, assuring a consistent and reproducible capture each time a sample is required. This is possible because the internal structure contains no dead space, is fully gravity drainable, and can be CIP'd and SIP'd aseptically before the sample is captured.

## Typical Applications

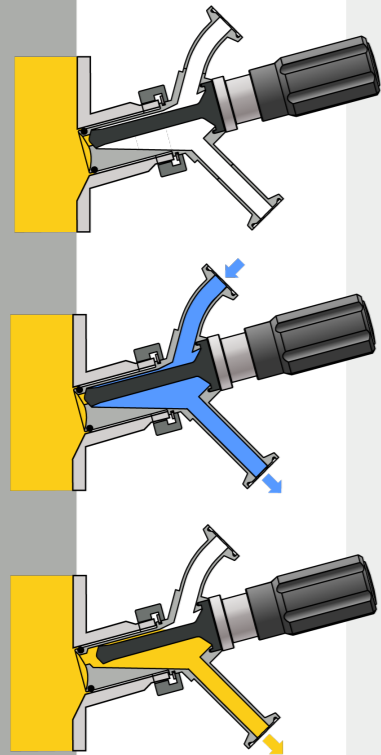
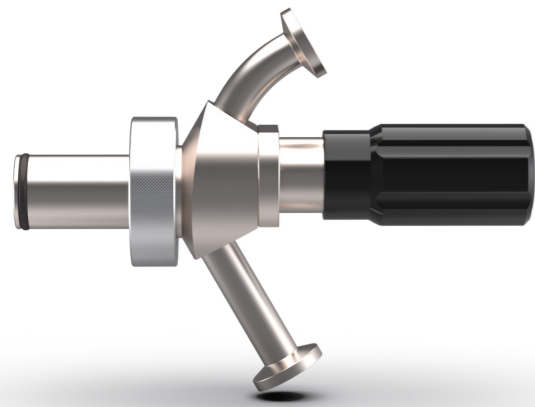
- Bioreactors/Fermentors
- WFI Systems (Storage Tanks, POU sites)
- Process Lines
- Formulation Tanks
- Sterile Holding Tanks
- General Purpose Storage Tanks

## BSV Hygienic Series Product Features

- Drainable even from inclined ports
- Retrofits into existing Ingold sensor ports or tri-clamp connections
- Cleans and sterilises in place
- Install or move in seconds, maintenance friendly
- Sanitary and dead space-free design

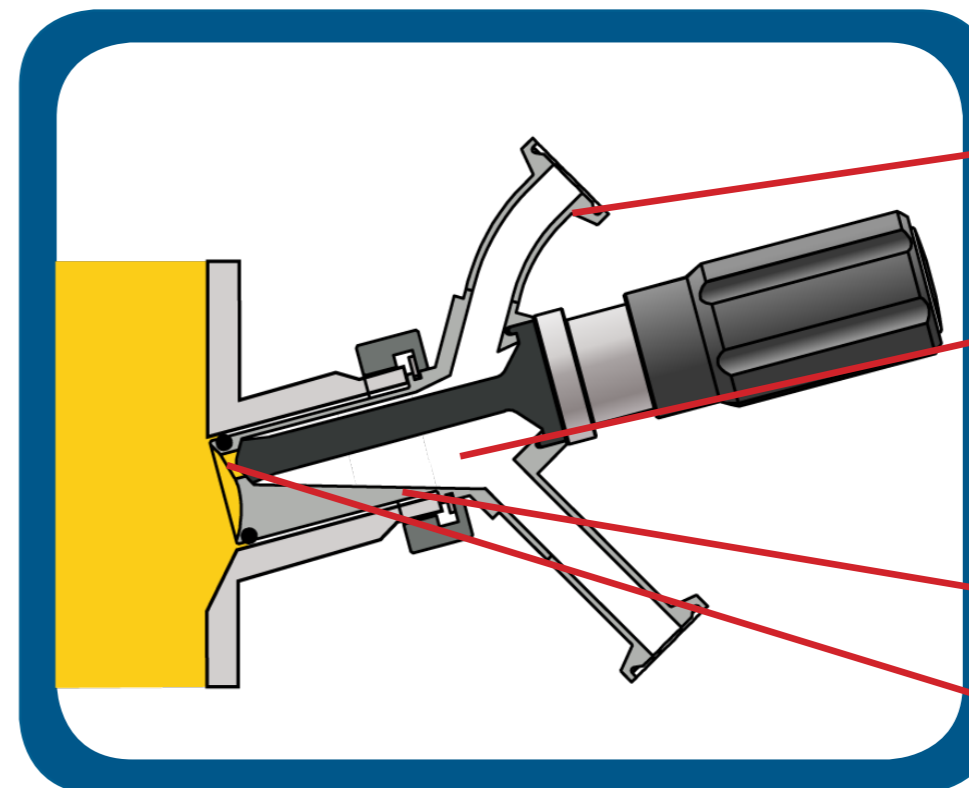
## Hygienic Sampling Valves

## BSV Hygienic Series



# TECHNICAL SPECIFICATIONS

Product Description	Carten BSV Hygienic Series Sampling Valve		
Sample Connection Size	1/2"		
Tank Connection	25mm/1" Ingold		
	37mm/1.5" Tri-Clamp		
	2" Weld-in		
Construction	Drainable from all ports even incline ports (up to 15°)		
Operating Pressure	6 Bar (90psi)		
Operating Temperature Range	0°C to 135°C (32°F to 275°F)		
Body Material	Barstock ASTM A276/A479 316L (S31603)		
Bonnet Material	ASTM A276/A479 316L (S31603)		
Handwheel Material	PPSU		
Diaphragm Material	EPDM (FKM or Silicon Options)		
Diaphragm Retainer	ASTM A276/A479 316L (S31603)		
Electropolishing	Validated as per ASME BPE (2014)		
Operator Mode	Manual or Pneumatic		
Quality and Compliance	EN 10204 3.1 Certified Materials		
	Certified as per the Pressure Equipment Directive 2014/68/EC		
Diaphragm Material	Steam	Liquid Media	
		Min	Max
EPDM	<b>Constant 135°C (275°F)</b>	-10°C (14°F)	90°C (194°F)



Choice of sanitary clamp or butt-weld inlet and outlet connections. Custom connections also available

Fluids drain down and out of valve even when installed in inclined portholes.

Valve body machined from 316L stainless steel.

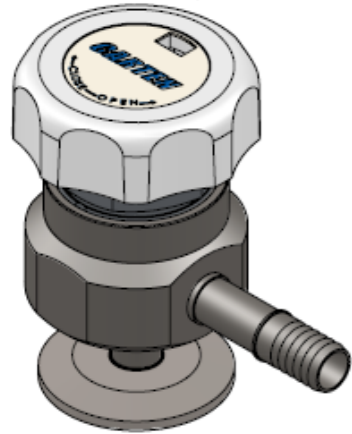
Smooth, declining internal passages to enhance drainability, cleanability and sterilisability

Large bore sample orifice opens directly into process.



# BSV SERIES CLEAN SAMPLING VALVE

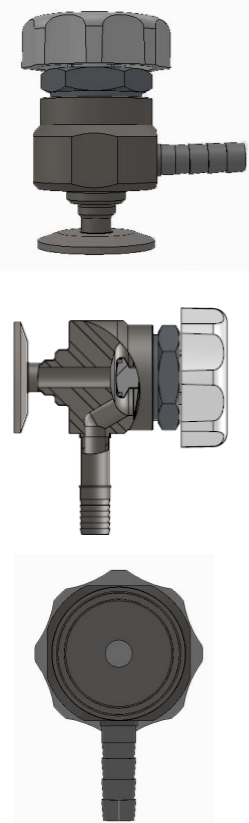
## Clean Sampling Valves



Carten also offers a Clean Sampling Valve Series. When closed, dead space does exist from the vessel side to the seat of the valve. However, internally the valve is fully drainable and constructed from high grade materials, and a metal-to-metal external bonnet seal will never need to be re-torqued. As an option for the customer this valve can also be supplied with a SIP/CIP port for ease of cleaning and maintenance in the system.

The Carten BSV Clean Series is used for sampling from a liquid process. While provided with a SIP/CIP it ensures sterilisation before and after taking a sample. This design is well suited for the pharmaceutical, cosmetic, food and dairy industries.

## BSV Clean Series

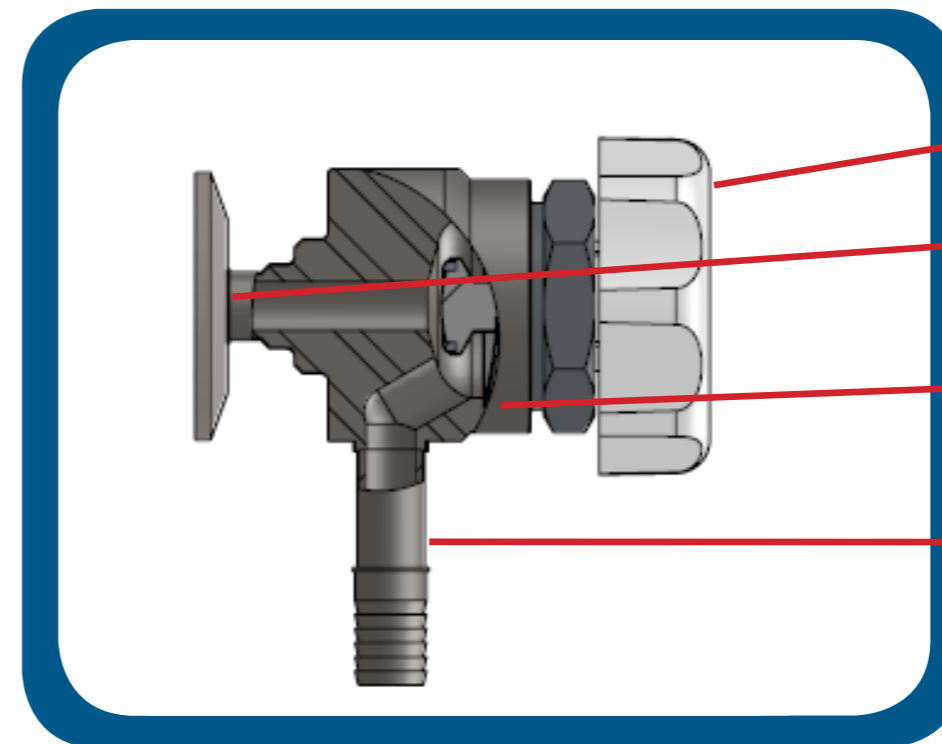


### BSV Clean Series Product Features

- Constructed from high grade materials for cleanability
- The metal to metal seal requires no retorquing
- Provided with or without CIP/SIP port
- Multiple connections available -tri-clamp, butt weld, barb fittings
- Cost Effective Sampling Solution

### Technical Specifications

Product Description	Carten BSV Clean Sampling Valve Series
Valve Size	1/2"
Tank Connection	1" Tri-Clamp as per ASME BPE
Construction	Bottom Entry Angle Valve
Pressure Rating	25 Bar (375psi)
Operating Temperature Range	Standard = 0 to 85oC, Special Seat = 0 to 150oC
Body Material	ASTM A276/A479 316L (S31603)
Bonnet Material	ASTM A276/A479 316L (S31603)
Handwheel Material	PC/POM
Diaphragm Material	Elgiloy, 316L (S31603) with PCTFE (standard)/VESPEL (special)
Diaphragm Retainer	ASTM A276/A479 316L (S31603)
Electropolishing	Validated as per ASME BPE (2014)
Operating Mode	Manual or Pneumatic
Quality and Compliance	Certified as per the Pressure Equipment Directive 2014/68/EC



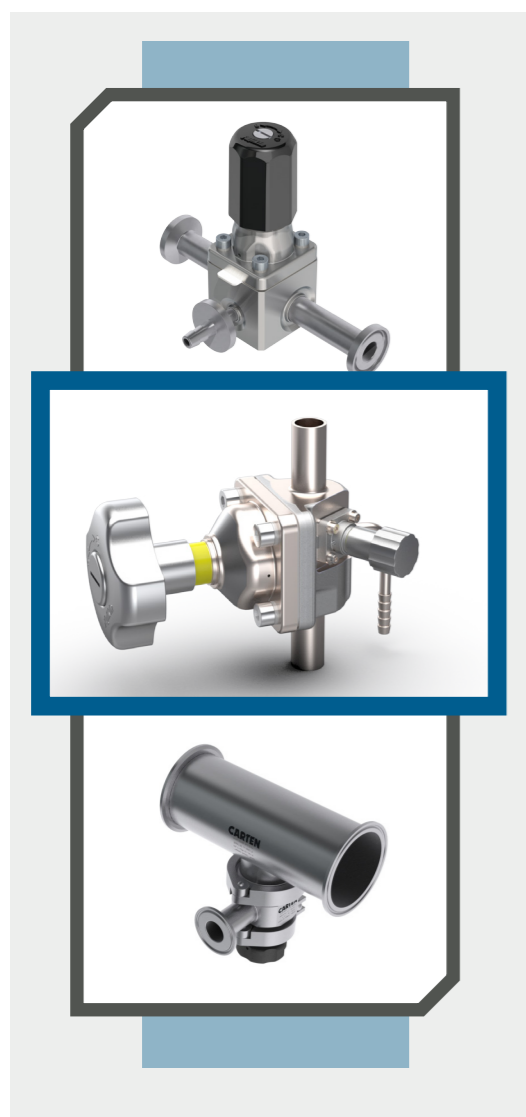
- Available in manual or pneumatic control
- Triclamp or Butt weld Connection to the tank/ vessel
- Valve body machined from 316L stainless steel.
- Tri-clamp, Barb, butt weld or alternative sampling connection types available

# CARTEN FLOW DISTRIBUTION VALVES

## Point of Use Valves

Point of Use valves (Flow Distribution Valves) are one of the most essential diaphragm valves used in the biotechnology, pharmaceutical, food and beverage industries. These valves allow process fluids to be transferred, sampled, drained or diverted with minimal impact on critical systems such as water for injection (WFI) and purified water. They can be provided with a SIP/CIP port that allows steam or materials to be purged rather than being trapped within the system.

Carten Point of Use and Flow Distribution valves provide the most efficient and best-in-class for drainability, cleanability, ease of maintenance and lightweight design for critical sterile processes.



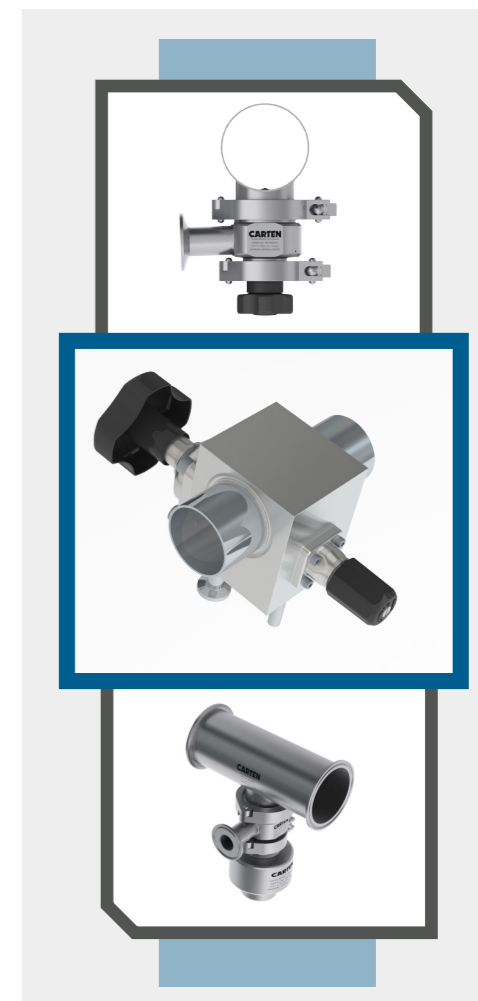
### Typical Applications

- Bioreactors/Fermentors
- WFI Systems (Storage Tanks, POU sites)
- Process Lines
- Formulation Tanks
- Sterile Holding Tanks
- General Purpose Storage Tanks

## Flow Distribution Valves

### Product Features

- Radial Diaphragm or Weir Diaphragm Designs available
- Valve remains flush with main process lines
- Integrated Elbow Option available for piping loops
- SIP/CIP port options available
- Simple Maintenance Friendly Design
- Sanitary Design, No Dead Space/Gravity Drainable Option Available
- Interchangability in Design
- Cost Effective (TCO) with Competitive Lead Times



### Technical Specifications

Nominal Size	DN8	DN15	DN20	DN25	DN40	DN50	DN80	DN100	DN150
End Connections	Triclamp, Butt weld (Other options available on request)								
Body Material	ASTM A479/A276 316L (S31603)								
Bonnet Material	ASTM A479/A276 316L (S31603)								
Diaphragm Material	EPDM, Silicon, Viton or PTFE								
Pressure Rating	10 Bar CWP150 (150psi)								
Operating Temperature Range	0°C to 135°C (32°F to 275°F)								
Surface Finish	SF0-SF6								
Operating Modes	Pneumatic and Manual								
Quality and Compliance	EN 10204 3.1 Certified Materials Latest Edition of the US Pharmacopeia Class VI Certified as per the Pressure Equipment Directive 2014/68/EC								

# OTHER CARTEN VALVES AVAILABLE

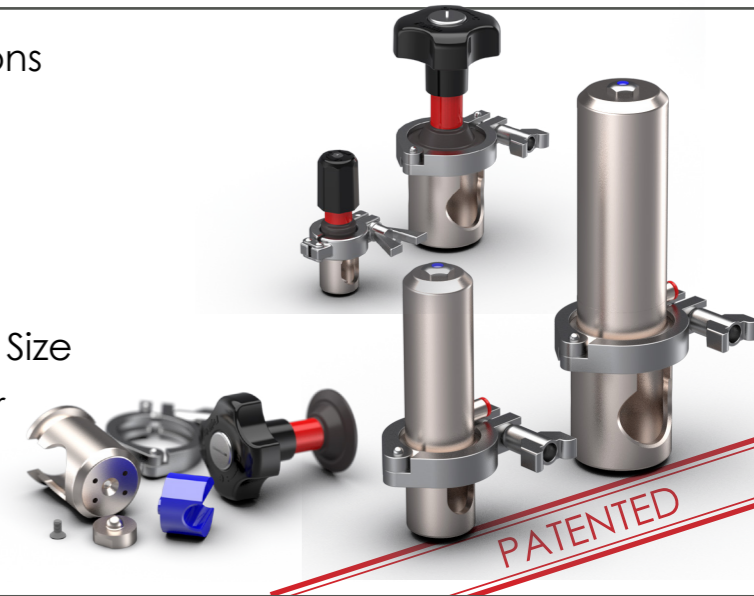
## BNW SERIES DIAPHRAGM VALVES



- ASME BPE Compliant Design and Dimensions
- SIP500 Rated Life Durability (ASME BPE rating)
- No Re-torquing Required
- Compact, Light Weight Stainless Steel Top Works
- Reduced Polymer Cold Flow Sealing Design
- Reduced TCO for Process Systems
- Range of Instrumentation Available
- 3-Way Zero Dead T (ZDT) leg configurations
- SIP & CIP Capability

## BPV SERIES PINCH VALVES

- Quick Release and Control Versions
- Reusable Highly Durable Valve
- Interchangeable Fittings
- For Use with Multiple Compounds
- For Use with Multiple Brands
- Rapid Changeout of Tubing, Line Size
- Lightweight Handwheel/Actuator
- No Particulate Generation
- Instrumentation Ready



## BTV SERIES TANK OUTLET VALVES

- No hold up volume or pooling
- Self Draining at any orientation
- Higher Cv/ Superior Flow
- SIP/CIP Port
- Cost Efficient
- Maintenance Friendly
- No Delivery Delays -Weld Component Sent in Advance



## BSP SERIES SIPTUBE VALVES

- Cleanable- and Sterilisable In-Place (CIP/SIP) while in operation
- Install in existing ports
- Simplistic design for reliability and fast, easy maintenance
- Body lengths up to 16 inches for sampling deep within the process system
- Suitable for process inoculating, media feeding and sampling
- 316L Stainless Steel construction
- Natural body insulation protects processes during sterilisation



## BPU SERIES POINT OF USE VALVES



- Lowest hold up volume in the industry
- Fully Cleanable/drainable
- Lightweight Design- Compare to ZDT
- Same High Flow as Carten TOV Valve
- 360-degree- Multiple Orientation
- Quick-release clamp topworks
- SIP/CIP port available

## SBV SERIES SANITARY BALL VALVES

- In-Line Maintenance
- Blow-out Proof Stem
- Cavity and Non-Cavity Filled Options
- 2-Way and 3-Way Configurations
- Bidirectional Sealing
- Anti-static features (on request)



# CARTEN®

High Performance Valves & Flow Solutions

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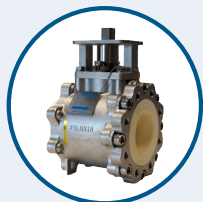
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## THE CARTEN-FUJIKIN RANGE



**Bellows Valves**

**Ball Valves**

**Check Valves**

**Diaphragm Valves**

**Tank Valves**

**Ceramic Valves**

**Sanitary Pinch Valves**

**Integrated Gas Sticks and Systems**