

CARTEN

FLOW SOLUTIONS - **WE GO BEYOND**

INTRODUCING CARTEN'S CSV SAMPLING SERIES CLEAN SAMPLING VALVES



CSV Sampling Series

Clean Sampling Valves

The CSV series offers a maintenance-free sampling valve, as no diaphragm changeout is necessary – even after CIP / SIP

Key Features

Available in line sizes up to 1" (inlet) / ½" (outlet sampling connection)

No diaphragm changeout – maintenance free

Pneumatic or manual interchangeability

Up to 150C and 25bar operation condition

Typical Applications

In-line sampling, bioreactor sampling, hold tank sampling, WFI sampling, high pressure sampling, automated sampling system, maintenance-free sampling system.

Key Specifications

Materials of Construction	Cleanliness	Specifications	Options
316L stainless body	Manufactured in Class 10 Cleanroom	Leak tested using Mass spectrometer <math><1 \times 10^{-9}</math> mbar.l/s	Manual or pneumatic, LOTO failsafe configurations
Elgiloy Diaphragm	Zero particles @0.1µm	<math><10</math>Ra micro-inch surface roughness	PFA / PI seat high temperature (up to 150C)
Barstock-only source	<math><10</math>ppb O ₂ /H ₂ O outgassing	Vacuum and pressure tested 100% production control	4/20mA switching / signalling automation
PCTFE standard seat vespel on request	Cleaned using 18.2 MΩ.cm DI water	375p.s.i. operating pressure	2.5 - 9.0 Cv (flow coefficient)



CSV Series Clean Sampling Valve

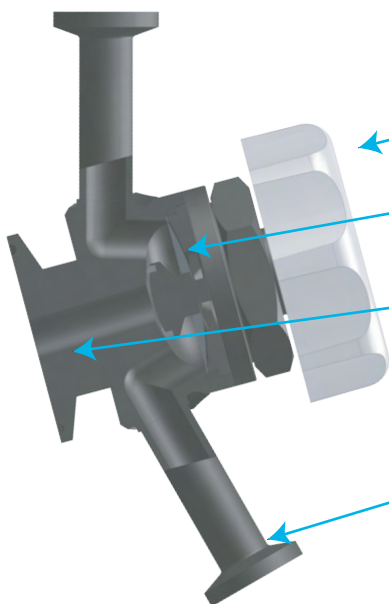
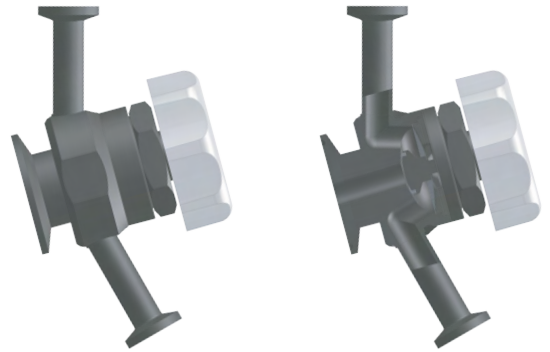


Carten also offers a Clean Sampling Valve Series. When closed, dead space does exist from the vessel side to the seat of the valve. However, internally the valve is fully drainable and constructed from high grade materials, and a metal-to-metal external bonnet seal will never need to be re-torqued. As 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.

CSV 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



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

Technical Specifications

Product Description:		Carten CSV Clean Sampling Valve Series
Valve Type		Sampling Valve
Sampling Connection Size (OD)		3/8" (DN10), 1/2" (DN15)
Control Function		Manual or Pneumatic
Pressure Rating		25 Bar (375psi)
Operating Temperature		0°C to +150°C
Construction		Bottom Entry Angle Valve
Tank Connection		1" Tri-Clamp as per ASME BPE
Materials	Body	Barstock
	Diaphragm Material	SS 316L
	Actuator	Bonnet Handwheel
Electropolishing		Elgiloy, 316L with PCTFE (standard)/VESPEL (special)
Surface Finish		SS 316L
Leak Rate		Validated as per ASME BPE (2014)
Applicable Standards/Certification		ASME BPE SF4 (15 Ra µin. EP)
ASME BPE		ANSI FCI 70/2 Class VI, Helium Leak Tight <1E-9mbar.l/s
PED		Compliant as per ASME BPE (2022)
QMS Certification		Certified as per Module D1 Pressure Equipment Directive
Facility Certification		ISO9001:2015 PED Module D1
Facility Certification		Cleanrooms as per ISO 14644-1, Class 4, 5, 6

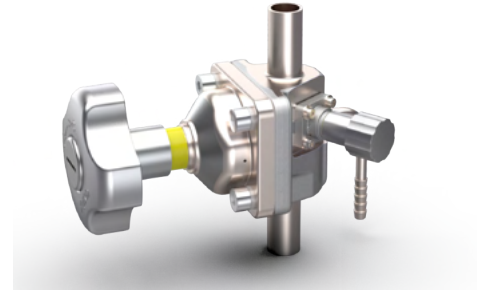
Point of Use Valves

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.

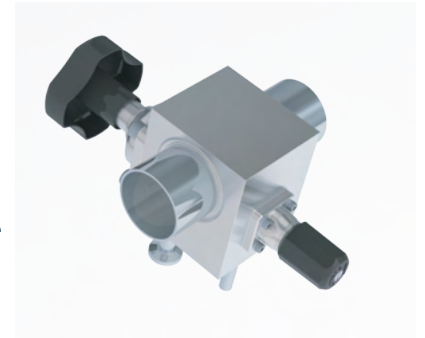
Typical Applications

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



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, Buttweld (Other options available on request)								
Body Material	ASTM A479/A276 316L (S31603)								
Bonnet Material	ASTM A479/A276 316L (S31603)								
Diaphragm Material	PTFE, EPDM or Viton								
Pressure Rating	10 Bar CWP150 (150psi)								
Operating Temperature Range	0°C to 135°C (32 °F to 275 °F)								
Surface Finish	SFO-SF6								
Operating Modes	Pneumatic and Manual								
Quality and Compliance	EN 102043.1 Certified Materials Latest Edition of the US Pharmacopeia Class VI Certified as per the Pressure Equipment Directive 2014/68/EC								

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