

## Tank Outlet Valves (BTV Series)

Sterile, Aseptic and Sanitary Valves for Critical Process Systems



For Biotechnological, Pharmaceutical, Food and Beverage Process Systems

# WHY CHOOSE THE CARTEN BTV SERIES?

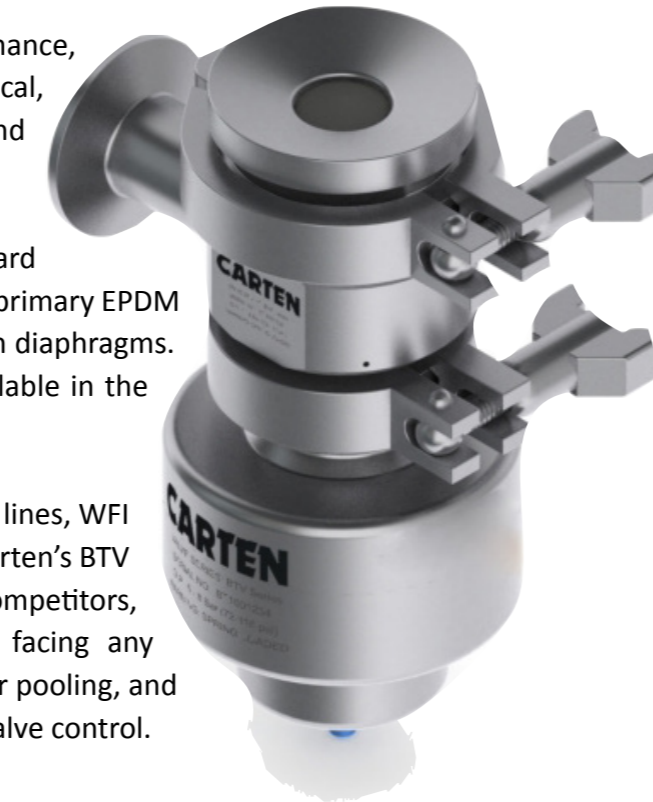
Carten has developed an optimal valve to increase performance, durability and efficiency for demanding Biotech, Pharmaceutical, Food & Beverage process systems where purity, hygienic and sterile conditions are essential for product yield.

The BTV series tank outlet valves are available in standard version or with CIP/SIP port. The BTV series is provided with a primary EPDM diaphragm with alternative options including Silicon and Viton diaphragms. This innovative design ensures the largest flow capacity available in the industry.

This BTV series is suitable for bioreactors, fermenters, process lines, WFI systems, formulation tanks, sterile holding tanks and more. Carten's BTV series tank valve in addition to providing a higher Cv than all competitors, has self draining capability, can be installed with outlet facing any orientation, is maintenance friendly, has no hold up volume or pooling, and can be provided with an optional CIP/SIP port or diaphragm valve control.

Carten's BTV series tank outlet valve provides the most efficient and best-in-class for higher flow capability, 360° orientation, self draining, maintenance friendly design for critical sterile processes. Key product features include:

- No hold up volume or pooling
- Self Draining
- Higher Cv/ Superior Flow
- Orientation - Any Direction, Any Time
- SIP/CIP Port
- Cost Efficient
- Maintenance Friendly
- No Delivery Delays



## TYPICAL APPLICATIONS

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

### Carten - A member of the Fujikin Group

Fujikin (FCG) are global leaders in the design, manufacture and development of High Performance Valves and Flow Solutions to high technology and demanding process sectors including Semiconductor, Photovoltaic, LED, Biotech, Pharmaceutical, Food & Beverage, PCI, Energy and Laboratory industries delivering products with safety, reliability, efficiency and performance to critical process systems and modules. Fujikin have been supplying valves, fittings and piping products to industry since its inception in 1930. Understanding customer processes and requirements has driven FCG to innovate and develop leading edge performance valves, mass flow controllers, seal fittings and flow systems which deliver best-in-class performance, reliability and efficiency for its customers.

# TECHNICAL SPECIFICATIONS

Nominal Size	DN15	DN20	DN25	DN40	DN50	DN80
End Connections	Triclamp (Other options available on request)					
Body Material	ASTM A276/A479 316L (S31603)					
Bonnet Material	ASTM A276/A479 316L (S31603)					
Diaphragm Material	EPDM, Silicon or Viton					
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 97/23/EC					

Diaphragm Material	Steam	Liquid Media	
		Min	Max
EPDM	Constant 135°C (275°F)	-10°C (14°F)	90°C (194°F)

Port Connection		Kv-Value Water [m3/h]	Cv-Value	Max. Operating Pressure
[mm]	[inch]			
15	1/2"	-	-	6 Bar (87psi)
20	3/4"	8.6	10.0	6 Bar (87psi)
25	1"	16.16	18.8	6 Bar (87psi)
40	1 1/2"	33.36	38.8	6 Bar (87psi)
50	2"	111.8	130.0	6 Bar (87psi)
80	3"	184.9	215.0	6 Bar (87psi)

## CARTEN'S SIP TEST RIG



### An Asset in Carten's Research and Development Centre

Carten Ireland have on-site thermal cycling test capabilities. Our thermal cycling test module has programmable SIP features enabling Carten to perform and replicate specific process conditions. Carten collaborates with our customers to provide detailed process data for valve performance under customer process conditions. This involves testing the sealing structure of the diaphragm in our Carten's Diaphragm, Tank Outlet and Ball Valves. Through this process the media, the cycle number and deviation can be independently stipulated. For further details on Carten's Research and Development facility and on testing capabilities for our customers contact sales@cartencontrols.com



# ORGANISATIONAL CAPABILITIES

Carten Controls was founded in 1970 and in 1981 established its European operations in Waterford, Ireland. Understanding customer processes and requirements has driven FCG to innovate and develop leading edge performance valves, mass flow controllers, seal fittings and flow systems which deliver best-in-class performance, reliability and efficiency for its customers.

The Waterford facility is encompassing of a 8,000m<sup>2</sup> site (3,901m<sup>2</sup> production space) where ultra high purity and high performance valves and flow solutions are designed and manufactured on site utilising the following Equipment and Instrumentation:



- 18.2 Ω DI Water Generation Plant, with 18.2 Ω Purified Water System supply to all processes (ASTM D5127, USP 23)
- Electropolish, Passivation, and Effluent Treatment Plants to ASTM A380-A967-B912-EPA Standards
- 7 x Centrifugal Autogenous Tig Welding (GTAW) Lathes
- Manual Mechanical Polishing and 1 x Abrasive Flow Machines



- Automated Multi-Stage Hilsonic Aqueous Clean Line with Ultra Sonic and DI Water Rinsing
- Full CNC Machine Shop Capabilities Comprising CNC Milling/ Lathe, automated cutting, and Toolroom for Jigging and Fixturing (2 x Toolmakers)



- Hydrostatic Test Capability as per ANSI FCI 70/2, Class IV & VI
- 6 x Mass Spectrometer Helium Leak Detectors



- 2 x PMS Lasair11 Particle Counter 0.1µm Detection Limit
- 1 x Naneum NPC10 Nano Particle Counter 0.01µm Detection Limit
- 1 x Halo Tiger Optics Moisture CRDS Trace Gas Analyser 2ppb Detection Limit
- 1 x Teledyne Oxygen Trace Gas Analyser 10ppb Detection Limit
- 1 x ATEQ F-Class Pressure Decay Leak Detector
- 1 x AMI207 ARC Orbital Weld Station
- 3 x AMI307 ARC Orbital Weld Station
- 2 x Tritool Severmaster AC Tube Cutters, with Squaring Modules
- 1 x Carbolite UHP (5.0 purity) Nitrogen Convection Oven
- 1 x Entegris Gatekeeper Gas Purifier Panel (<1ppb, 9.0 purity – process gases)
- Automated Vacuum Packaging

# OTHER PRODUCTS AVAILABLE

## BNW SERIES DIAPHRAGM VALVES



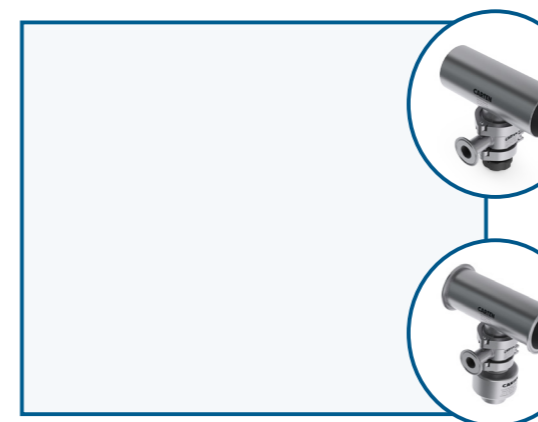
- ASME BPE Compliant Design and Dimensions
- SIP500 Rated Life Durability (ASME BPE rating)
- No Re-torquing Required
- Compact and Light Weight Deep Drawn Stainless Steel Top Works
- Reduced Polymer Cold Flow Sealing Design
- Reduced Total Cost of Ownership for Process Systems
- Range of Instrumentation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

## 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)

## 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
- Ease of Maintenance- Quick-release clamp topworks
- SIP/CIP port available

# CARTEN®

High Performance Valves & Flow Solutions

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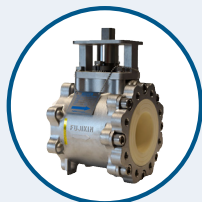
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Carten Controls and Fujikin Deutschland are members of the Fujikin Carp Group (FCG) with Headquarters in Osaka Japan.

## THE CARTEN-FUJIKIN RANGE



**BELLOWS VALVES**

**BALL VALVES**

**CHECK VALVES**

**DIAPHRAGM VALVES**

**TANK VALVES**

**CERAMIC VALVES**

**INTEGRATED GAS STICKS AND SYSTEMS**