

CARTEN®

High Performance Valves & Flow Solutions

Dome Diaphragm Valves (BND Series)

Sterile, Aseptic and Sanitary Valves for Critical Process Systems



For Biotechnological, Pharmaceutical, Food and Beverage Process Systems

WHY CHOOSE THE CARTEN BND SERIES?



Carten-Fujikin's BND series dome diaphragm valves provide a high purity and sanitary environment to protect valuable biologic product, in particular after purification (i.e. chromatography). This is due to minimal product contact with any synthetic polymers, therefore preventing any leaching into the product before vial-filling.

Electropolished 316L (valve body) and high grade Hastelloy C22 (diaphragm) provide the primary product contact materials of construction, supplemented by a high performance PFA seat insert to provide an internal seal to vacuum level.

Due to these superior materials of construction the valve assembly can see up to 2m cycles, with the unique internal profiles allowing accurate control for smaller volumes.

As the Valve structure is constructed from high grade ASTM barstock the unique valve profile and Carten capabilities allow multiple block format configurations, suitable for filling lines and chromatography columns in particular.

Key BND Series product features include:

- Flow Capacity suited for Filling Lines
- Hastelloy C22 diaphragm allows Minimal Polymer Contact Material - Reduced threat of Leachables and Extractables
- High Durability over 2 million cycles at ambient temperature
- Gravity Drainable
- Scalable to Multiport block versions

TYPICAL APPLICATIONS

- Filling Lines
- Chromatography
- Steam in Place (SIP)
- Clean in Place (CIP)
- Process Lines

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	DN8	DN10	DN15
End Connections	Tube or Tri-Clamp		
Body Material	ASTM A479/A276 316L (S31603)		
Bonnet Material	ASTM A479/A276 316L (S31603)		
Diaphragm Material	Hastelloy C-22		
Diaphragm Back-up	2 x 316L SS		
Seat Material	PFA		
Pressure Rating	10 Bar		
Operating Temperature Range	-10°C to 150°C (14°F to 302°F)		
Surface Finish	SF0-SF6		
Operating Modes	Pneumatic and Manual		
Quality and Compliance	EN 10204 3.1 Certified Materials Certified as per the Pressure Equipment Directive 97/23/EC		

Diaphragm Material	Steam	Liquid Media	
		Min	Max
Hastelloy C-22	Constant 150°C (302°F)	-10°C (14°F)	90°C (194°F)

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

ADVANTAGES OF THE CARTEN BND SERIES



Minimal Polymer Contact Material -

316L valve body, hastelloy C22 diaphragm, PFA seat insert

High Durability Valve

Over 2 million cycles at ambient temperature, over 250k cycles at 150°C/302°F

Low Cv Flow

Allowing greater control for filling lines

BPE Compliance

BPE Compliant design includes Mating and drop-in replacements.

Gravity Drainable

Fully drainable when installed in the vertical position.

Scalable

Scalable to multiport block format, making the BND Series especially suitable to multiple filling lines.

Competitive Price and Performance

Carten-Fujikin provides the lowest total cost of ownership for its BND valve product range. The BND valve series provides a competitively priced product with the high performance capability demanded by the Biotech, Pharmaceutical, Food and Drink industries. Carten-Fujikin's quality and technical support ensures all customers receives efficient value and reliability in mission critical process systems.

Test Centre

Carten-Fujikin Europe has constructed a state-of the-art test facility that allows the repetition of industrial installation condition, to ensure every valve is fit for purpose. In-house capabilities include Steam-In-Place thermal cycling capability to match ASME BPE and industry standards, replication of Clean-In-Place (CIP) flow, verification of valve drainability, and fluid control. Our in-house capability allows the reproduction of exact customer specification – tailored pressure profiles, sterilisation temperature and duration, cooldown process parameters and more can be replicated to match installed condition to ensure confidence in all product.

Engineering Support and Design

Carten-Fujikin supports its BPU series through engineering services including modular design, flow analysis and calculations based on customer requests.

Global Support

The FCG distribution network supports global supply of product through its distribution partners and direct global network. This enables fast time to market and responsiveness for customer product demands and delivery and post purchasing needs and customer support.

BND Series Product Description

BND - TWV 15 A 4 - 1 A 15 - H S - C U

[illegible]

OTHER PRODUCTS AVAILABLE

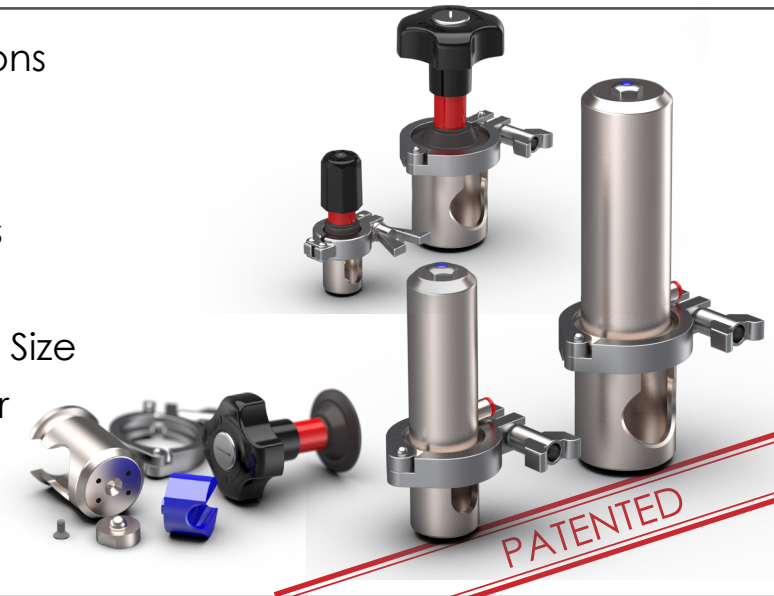
BNW SERIES DIAPHRAGM VALVES



- ASME BPE Compliant Design and Dimensions
- SIP500 Rated Life Durability (ASME BPE rating)
- No Re-torquing Required
- Compact, 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



BSV SERIES SAMPLING VALVES

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



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



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

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)



The contents of this datasheet are presented for information purposes only. While every effort has been made to ensure the contents accuracy, information published is not construed as warranties or guarantees, expressed or implied, regarding products or services described herein or its use or applicability. Carten-Fujikin reserves the right to modify or improve the designs or specifications of its products at any time without notice.

CARTEN[®]

High Performance Valves & Flow Solutions

Carten Controls Ltd.,
Unit 609, Waterford Industrial Park,
Waterford Ireland

Tel: +353 (0)51 355436
Fax: +353 (0)51 378054
Email: sales@cartencontrols.com
Website: <http://www.cartencontrols.com>

Fujikin (Deutschland) GmbH
Immermannstraße 33 -
D-40210 Düsseldorf, Germany.

Tel: +49 (0) 211-350458
Fax: +49 (0) 211-363990
Email: info@fujikin.de
Website: <http://www.fujikin.de>

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

THE CARTEN-FUJIKIN RANGE



Bellows Valves

Ball Valves

Check Valves

Diaphragm Valves

Tank Valves

Sampling Valves

Hybrid Single Use Pinch Valves

Ceramic Valves

Integrated Gas Sticks and Systems