



Sanitary Pinch Valves (BPV Series)

Multi-Use Solutions for Single-Use Systems



Multi-Use Pinch Valves for SU Bioprocessing Applications

PATENTED

WHY CHOOSE CARTEN'S BPV SERIES?



“Hybrid Pinch Valves For Bioprocessing Systems”

The Carten BPV series offers unique advantages over traditional single use valves, pinch valves or alternatives, through ensuring an operator friendly product that minimises changeover times between batches. When a new tubing size is required, there is no costly new valve purchase required as within normal operating conditions all line sizes are covered by just two valve footprints. A simple changeout of a compressor and tube holder is all that is required.

Critically this product allows the user to select the tubing compound and brand that is suitable for the application, and Carten ensure the valve will suit the selected tubing. This allows the user to run their validated tubing throughout the system, without breaks and risk of leak path creation – and including control functionality.

As downstream processes - in particular - require a higher level of automation, linear stroke pneumatic actuators provide sufficient force to operate at higher pressure, even with braided reinforced tubing compounds. A control valve option includes a special modification allowing for linear control of flow rate, and sensitive pressure control for applications such as TFF. Skid-mountable automatic and manual valves are available to aid the industry movement towards greater automated control.

Real-time analysis is critical for the industry as it moves forward to provide greater service to patients, Carten can now provide real-time analysis of tubing and valve systems. This unique sensor & software package can detect small micro-cracks to ensure batches are contamination-free and ensuring a preventive maintenance monitoring of single-use systems.

Carten validation packages ensure industry-accepted testing before any product is even installed, allowing a problem-free integration into any user system.

1-PIECE VALVES - SKID MOUNTABLE SOLUTIONS

1. High Life-Cycle Re-Usable Valve
2. One-Piece Skid Mountable Valve Assembly
3. Suitable for 1/8" – 1" (ID) Tubing
4. Protective Guard for Operation
5. Interchangeable Fittings to suit all Single Use Sizes
6. Suitable for both Platinum-Cured Silicon & TPE
7. Suitable for Multiple Brands
8. Instrumentation-Ready (proximity sensors etc.)
9. Real Time Valve and Tubing Analytics
10. Validated using Industry Conditions
11. Suitable for Continuous Manufacturing



Typical Single Use Applications

Filling Systems | Single Pass and Tangent Flow Filtration (TFF) | WFI
Bio-pharmaceutical manufacturing | Cell Culture | Chromatography | Aseptic
Biochemical Production and more...

One-Piece Manual Hinged Pinch Valve

Advantages of Carten's Manual Hinged Valve

1. One-Piece Valve Assembly, Reusable
2. Light-Weight PPS Handwheel (40% G.F.)
3. Fine Control Version per Line Size
4. Suitable for 1/8" – 1" (ID) Tubing
5. Suitable for both Platinum-Cured Silicon & TPE
6. No Lubricants Used
7. Compact Version Available (< 1/2")
8. Rapid Change-out of Tubing, Line Size
9. Real Time Valve and Tubing Analytics
10. Validated using Industry Conditions
11. Suitable for Continuous Manufacturing



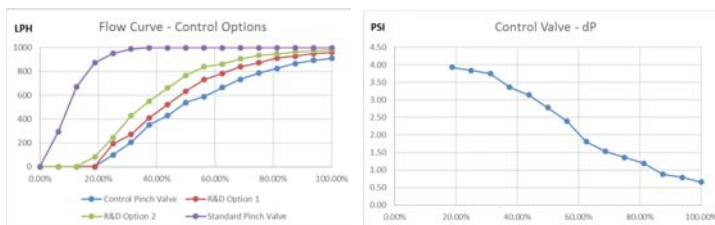
CARTEN'S ADVANCED TECHNOLOGY IN SINGLE USE

Real Time Analytics - Valve and Tubing

Using cutting-edge non-invasive sensor technology directly sensing the tube, it is possible to detect small micro-cracks on the product contact inner diameter of the tubing in real-time, preventing any risk of bacteria traps from tubing wear. Carten can provide a real-time analytics integrated software package monitoring the life cycle of the valve and tubing per batch - allowing for remote monitoring and risk-free preventive maintenance scheduling for the drug manufacturer. The sensor, in contact with the tubing, can physically detect the tube itself opening for safety assurance.



Precision Flow Control (Linear)

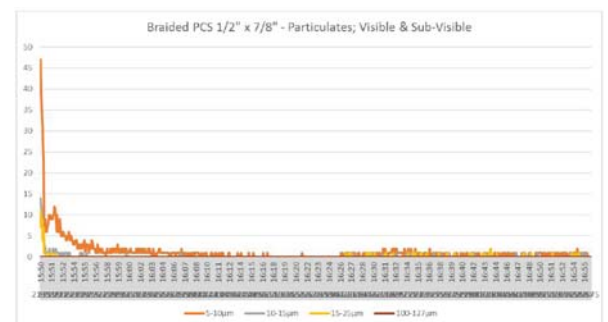


Where precise control is required, for example across TFF membranes, a tailored control valve can be produced for the requirement. This allows flow control, or the possibility of more sensitive pressure control, to suit the process. Critically, the same end user tubing can be used without

breaks, preventing the possibility of leak paths or multiple polymer compound usage.

High Specification Validation Technology

Carten utilises on-site technology borne from the semiconductor industry to perform real-time monitoring of multiple tubing compounds and brands, to analyse the effect of pinching single-use tubing for both control and shut-off functionality, ensuring particulates – both visible and non-visible – can remain a non-issue for the end use of drug manufacturing. Ultra-high purity 18.2 mega ohm-cm is recirculated after IEX to assure an industry-relevant analysis.



Validated Using Industry Conditions



Carten replicate industry-specific test conditions through an on-site R&D technology centre. Dynamic flowing and high-pressure static conditions are replicated to validate multiple tubing compound and brands to ensure compatibility with all industry options, so the drug manufacturer can choose the required option in confidence, utilising Carten's open architecture equipment risk-free. Customer Specific test analysis can be replicated on-site when required.

BPV Series Product Description

BPV - ADV P 25 S - B6 - I01

No.	Meaning	Description	1	2	3	4	5	6	7	9	10																																																																																																																																									
1	Valve Series	Bio Pinch Valve	BPV																																																																																																																																																	
2	Body Type	One-Piece (Pneumatic) Hinged (Manual)		ADV HIN																																																																																																																																																
3	Operation	Manual Pneumatic			M P																																																																																																																																															
4	Valve Footprint	Small (Up to 1/2" ID) Large (Up to 1" ID) High Pressure/Braided				25 50 80																																																																																																																																														
5	Control Type	Standard Control					S C																																																																																																																																													
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7	Tubing	Inner Diameter (ID)																																																																																																																																																		
8	Instrument Options	Feedback Sensor ElectroPneumatic Positioner Tamperproof Switch (Other options on request)									I01 B01 I04																																																																																																																																									
9	Additional Requirements																																																																																																																																																			

CARTEN[®]

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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