

# CARTEN

# ***PINCH VALVE***

# ***for Single***

# ***Use Applications***

***(BPV SERIES)***

***Solution for Single-Use Systems***



**Compatible with multiple tube diameters.  
The blade tube can also be completely closed.**

# Automatic pinch valves (pneumatic)

## Principal features of automatic pinch valves (pneumatic)

- **Compatible with single-use tubing with an inner diameter ranging from 1/16" to 1.5".**

- **Tube size can be changed.**

The tube holder can be replaced to accommodate multiple tube sizes, allowing for easy adjustments to line size.

- **Compatible with all standard tubes with three types of valves: small, large, and XL (BPA025/BPA050/BPA080).**

Three valve sizes are available to accommodate silicone or TPE tubing at fluid pressures of up to 0.15 MPa.

- **A 2XL (BPA100) part has been added to the line for use with 1.5" inner diameter pipes.**

- **Safety mechanisms**

To prevent fingers from getting caught during process operation or tube replacement, the tube closure section can be isolated by rotating the tube holder.



- **Feed/exhaust port for operating air on top of the cylinder**

This design allows for the installation of instrumentation equipment inside an enclosure, thereby reducing the need for waterproofing measures.



- **Compact mini size (BPA010)**

Suitable for use with an outer diameter of 3/8" or less. Ideal for reducing the size of bench plants and equipment.

- **Filter for exhaust air**

A filter has been installed on the exhaust port to facilitate use in biograde applications.



## List of tube holder part numbers (\*Custom sizes available upon request.)

Inner diameter	Outer diameter	Small (BPA025)	Large (BPA050)	XL (BPA080)
1/4"	7/16"	P200147		
1/4"	1/2"	P200215		
3/8"	5/8"	P20050	P200053	
1/2"	3/4"		P200111	P200093
1/2"	7/8"		P200052	P200109
3/4"	1"		P200037	P200096
3/4"	1 1/8"		P200112	P200104
1"	1 3/8"			P200013
1"	1 1/2"			



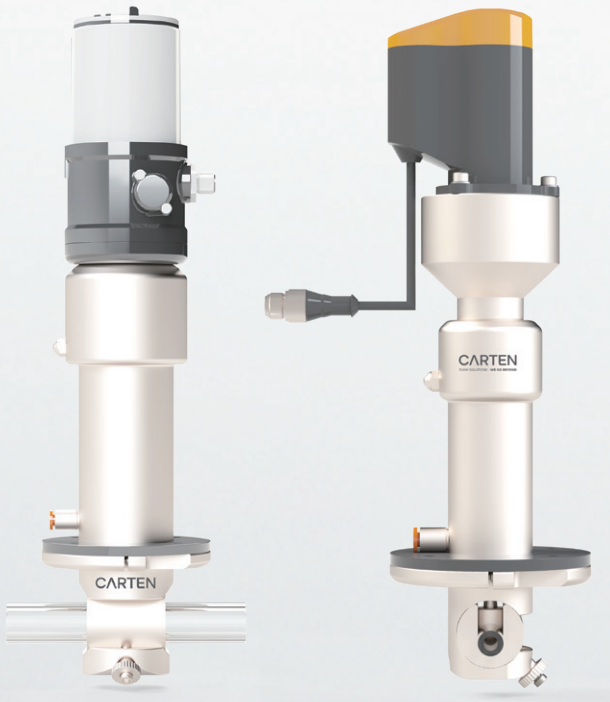
### Tube holder

\*The range of compatible tube sizes depends on the valve size.

## Specifications: Automatic pinch valves (pneumatic)

<b>Operating method</b>	Pneumatically operated
<b>Liquid pressure</b>	Maximum 0.5 MPa (dependent on tube hardness, fluid pressure, etc.)
<b>Liquid temperature</b>	Dependent on tube specifications
<b>Material</b>	Body, tube holder, stem, compressor: ASTM A479 316L (S31603)
	Actuator (cylinder and bonnet): ASTM A479 316L (31603)
	Options: Aluminum (alumite treated)
<b>Minimum actuator operating pressure</b>	Normal close type (N.C.): 0.6 MPa; normal open type (N.O.): 0.4 MPa
<b>Upper limit of actuator operating pressure</b>	0.7 MPa (both N.C. and N.O. types)
<b>Air feed port tube size</b>	6 mm standard (options available) *Air supply possible inside the enclosure

## Automatic pinch valve (pneumatic) options



### ● Positioner (PO)

An electro-pneumatic positioner can be mounted on top of the valve and used as a control valve. The opening is adjusted using a 4 to 20 mA signal.

### ● Proximity sensor (PS)

A proximity sensor detects stem position and provides feedback to peripheral devices. Closed position, open position, and open/close position detection are available.

### ● Open/close sensor (SO/SC)

Contactless sensor. There are several options available to meet your size and other requirements.

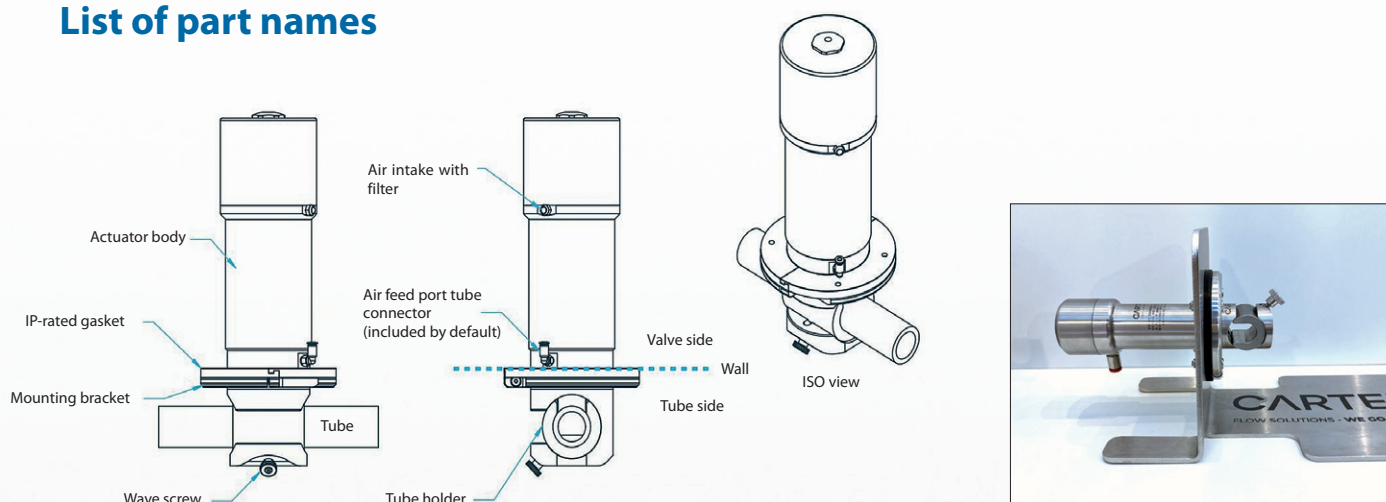
### ● Indicator (VI)

An indicator is installed on top of the valve to visualize its open and closed positions.

\*Please contact us if you have any additional requests for options.

# Installation method

## List of part names

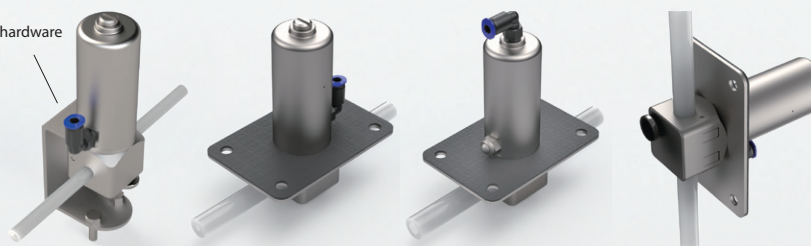


## Illustration of installed valve

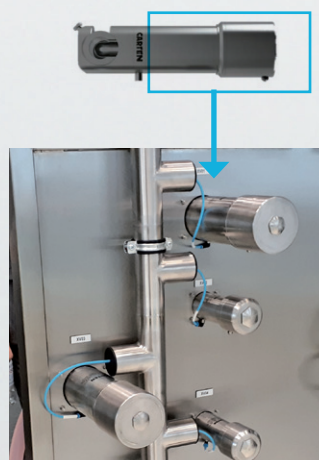
### ● Mini



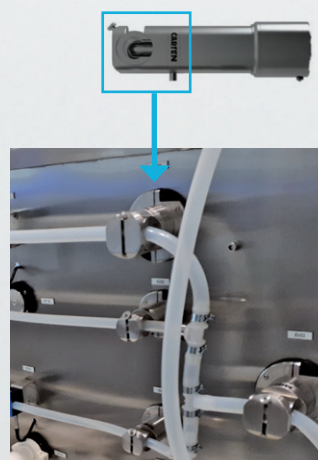
Mounting hardware



### ● Small, large, XK



Valve side



Tube side

# Electric pinch valve series

## Integrated system for single-use applications

Electric pinch valves provide an ideal solution for precise and efficient flow control across a variety of applications.

### Principal characteristics

- **High-speed operation:** Up to 30 mm/sec.
- **Compatible tube sizes:** Inner diameter 1/16" to 3/4"
- **The tube holder can be replaced, allowing for quick and easy line size adjustments.**
- **Easily integrates with SCADA control systems.**

### Typical uses

- **All upstream, downstream, and fill-finish applications for single-use systems**
- **Ideal for use in applications requiring ease of line size exchange.**

### Principal specifications

Valve material	Cleanability	Specifications	Available options
304/316 stainless steel	Assembled in clean and white rooms.	Operating speed of up to 30 mm/sec.	Selection of multiple brands, materials, and sizes of tubes available.
Aluminum-coated case for electric actuators	Particle-tested to take into account the effects of the compressor on tubing.	Control valve with automatic lock	There are multiple tube holders available, and the tube line size is exchangeable.
Stainless steel inner tubing	No lubricant or grease used in the tube insertion area.	12/24 V DC, 60 W at full load	4/20 mA switching/signaling automation Optional SAE J1939 compliance CANBUS or CiA 301 CANopen
EPDM gasket for skids	ASME BPE standard cleanliness	Outdoor actuators: IP66; cleaning-use: IP 69K	Custom cables up to 5 m

### Main features of electric pinch valves

- **Switch to a new line size by changing just one part.**  
Switching is possible by simply replacing the tube holder.
- **Two sizes accommodate all standard tubing.**  
Two valve sizes (EBPA25/EBPA50) are available to accommodate silicone or TPE tubing operating at pressures of up to 0.5 MPa.
- **Safety mechanisms**  
Rotating the tube holder isolates the area of valve operation, ensuring a safe design that prevents operators from getting their fingers or other body parts caught during process operation or tube replacement.



# Part number configuration: Automatic (pneumatic/electric)

## BPA 025 - 375 × 625 - NC - PS-SO

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1	Drive method	Pneumatic actuator	BPA						
		Electric actuator	EBPA						
2	Actuator size	Mini (inner diameter 1/16" to 1/4", outer diameter up to 3/8")	010 *Pneumatic type (BPA) only.						
		Small (inner diameter 1/16" to 3/8", outer diameter up to 5/8")	025						
		Large (inner diameter 3/8" to 3/4", outer diameter up to 5/4")	050						
		XL (inner diameter 1/2" to 1.5", outer diameter up to 2")	080 *Pneumatic type (BPA) only.						
3	Tube	Tube inner diameter		SIZE				SIZE	
				INCH	MM			INCH	MM
			020	1/50"	0.5		375	3/8"	9.6
			025	1/40"	0.635		437	7/16"	11.2
			031	1/32"	0.8		468	15/32"	12.0
			062	1/16"	1.6		500	1/2"	12.7
			093	3/32"	2.4		625	5/8"	15.9
			125	1/8"	3.2		630	0.63"	16
			156	5/32"	4.0		750	3/4"	19.05
			187	3/16"	4.8		875	7/8"	22.2
			250	1/4"	6.4		1000	1"	25.4
			312	5/16"	8		1250	1 1/4"	31.75
							1500	1.5"	38.1
			4	Tube	Tube outer diameter		SIZE		
INCH	MM	INCH					MM		
186	3/16"	4.72					1000	1"	25.4
249	1/4"	6.32					1122	1.122"	28.5
373	3/8"	9.47					1125	1 1/8"	28.57
375	0.375"	9.52					1374	1 3/8"	34.89
436	7/16"	11.07					1397	1.397"	35.5
498	1/2"	12.64					1712	1.712"	43.5
561	9/16"	14.24					1988	1.988"	5.5
625	5/8"	15.87							
750	3/4"	19.05							
875	7/8"	22.22							
5	Actuator Operating type	Normally closed type	NC						
		Normally open type	NO						
6	Options	Electro-pneumatic positioner	PO						
		Proximity sensor	PS						
		Open-side detection/close-side detection sensor	SO/SC						
		Indicator	VI						
		Pressure controller	PC						

\*We can also accommodate tube sizes other than those listed upon request.

