



## Product Applications

The Carten HBA4000 series is a pneumatically actuated bellows valve designed for bulk gas distribution in high purity gas systems where large gas flows are required to support demands in the facility. The Carten design HBA4000 pneumatic actuated valve model is suitable for inert gases, most toxic gases and most solvents delivering performance, containment and cleanliness for the process media. The unique pneumatic actuator has a innovative visual open/close indicator providing the user with a visible signal when the valve is in an opened or closed position. The unique bellows valve design enables the HBA4000 to achieve superior flows at low to medium operating pressures under a variety of system temperatures in the ever-challenging demands in high technology markets

### Primary Applications Include:

- Ultra-high purity process gases
- Ultra-high purity bulk gas delivery systems
- Automated isolation control in filter stations
- Automated isolation control in purifier systems
- Ultra-high purity gas supply in tank farm and gas yard installations

### Primary Product Features:

- Durable bellows valve design for ultra-high purity and superior flow
- Innovative actuator design with visual open/close indicator
- Compact and robust actuator design to fit in high purity gas installations
- Pneumatic operation available in normally closed (NC) and normally open (NO)
- Capability to fit proximity sensors for PLC control purposes
- Broad pneumatic air supply range from 60-100 psi (4.2-6.9 bar)
- No internal particle shedding of components
- Superior leak rate of  $1 \times 10^{-9}$  scc/s Helium for bellows seal and PCTFE seat
- Assembled and tested in a class 10 cleanroom for cleanliness
- Purge ports and purge valves are integral in the valve body
- Electropolished wetted surface for superior corrosion resistance
- Individual serialisation of valves for complete quality traceability
- Capable of operating at temperatures between -30°C to +150°C \*\*

### > MORE INFORMATION

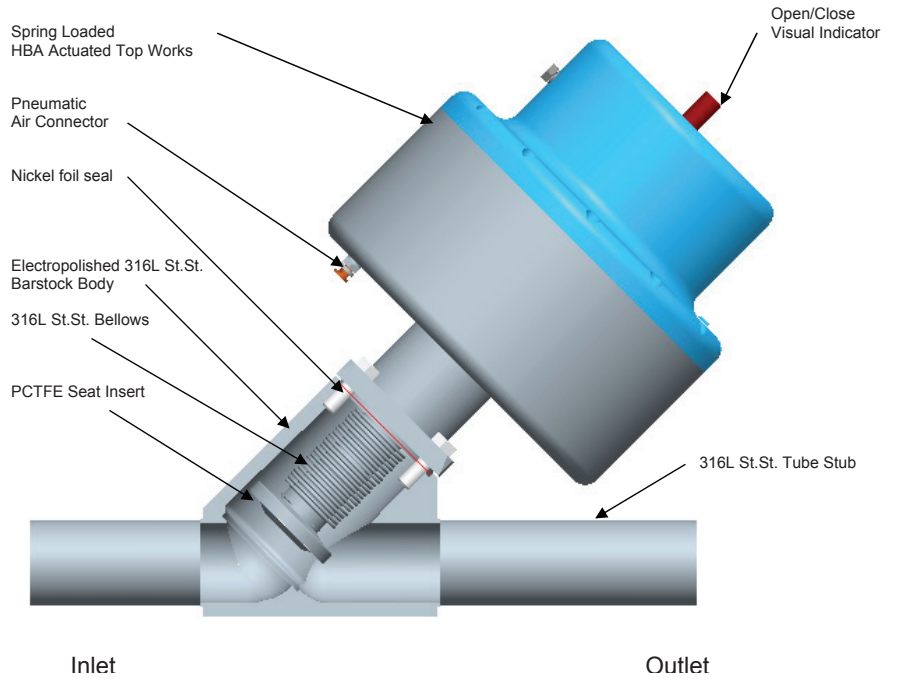
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\* Carten can advise on the suitability of specific media based on the compatibility or otherwise with the materials of construction for the valve. It is the responsibility of the systems design engineer to make a selection on the suitability of valves based on their knowledge of gas design systems, the materials of construction and the specific operating conditions of the system.

\*\* Standard operating temperature for PCTFE is -30°C to +82°C. A polyimide (Vespel) seat will enable the valve to operate at a higher temperature, up to +150°C.



Construction Material	Wetted Areas	316L St.St., Nickel, PCTFE	
	Non-Wetted Areas	316L St.St., 303 St.St., Aluminum	
Maximum Operating Pressure	HBA1502 HBA2000 HBA2502 HBA3002	Vacuum to 250 PSI (17Bar)	
Orifice	HBA1502 HBA2000 HBA2502 HBA3002	1.370" (34.80mm) min 1.870" (47.50mm) min 1.870" (47.50mm) min 1.870" (47.50mm) min	
Maximum Operating Temperature	PCTFE Seat Vespel ®Seat	-30°C to +82°C (-22°F to +180°F) -30°C to +150°C (-22°F to +302°F) ***	
Flow Coefficient (C <sub>v</sub> )	HBA1502 HBA2000 HBA2502 HBA3002	63.30 74.10 75.00 75.00	
Helium Leak Test	Inboard/across the seat	1 x 10 <sup>-10</sup> scc/s He max	Rated
		1 x 10 <sup>-9</sup> scc/s He max ***	Standard Production
Helium leak test performed with 100% Helium			

Cleanliness	Assembled and tested in a Class 10 cleanroom. Purged and packaged in a Class 1 area. Double-bag packaging for containment. Cleaned in 18 Ω DI water for O <sub>2</sub> service.
Standard Finish	Electropolished to 10Ra (0.25µm) EP on all wetted surfaces.
Air Supply	60-100 psi (4.2-6.9 bar)
Air Connector	¼" OD quick connector tube
Options	<ul style="list-style-type: none"> <li>• Optional surface finishes</li> <li>• High temperature capability</li> <li>• Manual operation</li> <li>• Fitting of Ex proximity sensors</li> <li>• Metric and ISO tube stubs</li> <li>• Particle, moisture, THC and O<sub>2</sub> testing</li> <li>• Optional body materials in VIM/VAR st.st.</li> </ul>

> MORE INFORMATION

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\*\*\* Helium leak rate for vespel seated valves is rated at 1 x 10<sup>-6</sup> scc/s across the seat for pneumatically operated model