

HBA SERIES Ultra-High Purity Air-actuated Bellows Valves



PRODUCT APPLICATIONS

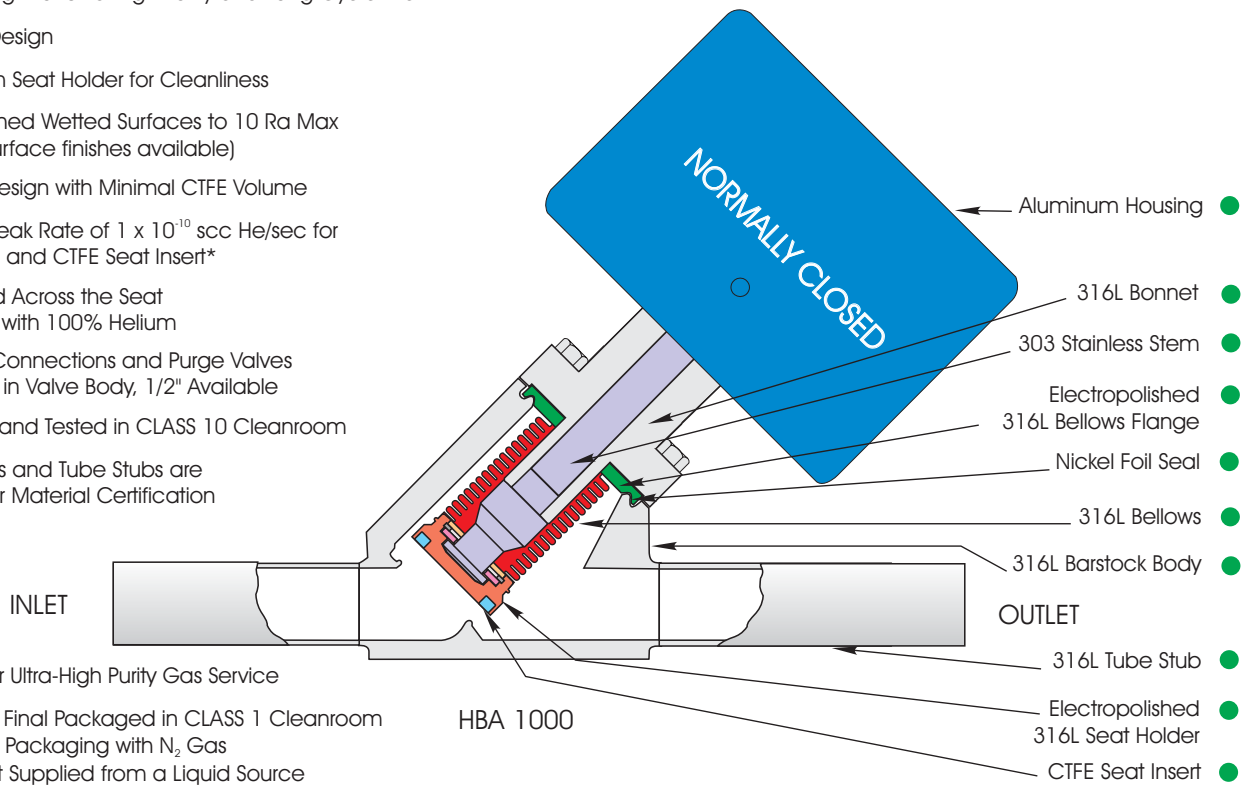
This HBA stainless steel (bellows design) valve series[†] is intended for bulk gas distribution service where containment, cleanliness and purity are of utmost importance. Applications for these valves include:

- High-purity gas distribution system control
- High-purity gas valves for point-of-use service
- Superior containment and cleanliness for your most critical valve applications
- Use with inert and most toxic gases

PRODUCT FEATURES

- ▶ Bellows Design for Ultra-High Purity and Long Cycle Life
- ▶ Compact Design
- ▶ Ultra Smooth Seat Holder for Cleanliness
- ▶ Electropolished Wetted Surfaces to 10 Ra Max (Optional surface finishes available)
- ▶ New Seat Design with Minimal CTFE Volume
- ▶ Maximum Leak Rate of 1×10^{-10} scc He/sec for Bellows Seal and CTFE Seat Insert*
- ▶ Inboard and Across the Seat Leak Tested with 100% Helium
- ▶ 1/4" Purge Connections and Purge Valves are Integral in Valve Body, 1/2" Available
- ▶ Assembled and Tested in CLASS 10 Cleanroom
- ▶ Valve Bodies and Tube Stubs are Serialized for Material Certification
- ▶ Cleaned For Ultra-High Purity Gas Service
- ▶ Purged and Final Packaged in CLASS 1 Cleanroom Double-Bag Packaging with N₂ Gas Environment Supplied from a Liquid Source

CONSTRUCTION MATERIALS



*Excluding Permeation of CTFE

HBA SERIES - Technical Data

CONSTRUCTION MATERIAL	Wetted Areas	316L Stainless Steel, Nickel, CTFE	
	Non-Wetted Areas	316L Stainless Steel	
MAXIMUM OPERATING PRESSURE	HBA Series	Vacuum to 375 psi (25 BAR)	
OPERATING TEMPERATURE RANGE	HBA Series	-22° F (-30°C) to 180° F (82°C)	
FLOW COEFFICIENT (C _v)	MODEL	C _v	ACT. PRESSURE
	HBA 751 HBA 1000 HBA 1501 HBA 1502 HBA 2000 HBA 3004 HBA 4000 HBA 6004	10.2 14.3 16.6 63.3 74.1 175.0 181.0 185.0	60-80 (psi) 5-6 bar 60-80 (psi) 5-6 bar 60-80 (psi) 5-6 bar 60-80 (psi) 5-6 bar 60-80 (psi) 5-6 bar 50-60 (psi) 3-4 bar 50-60 (psi) 3-4 bar 50-60 (psi) 3-4 bar
AND ACTUATOR PRESSURE			

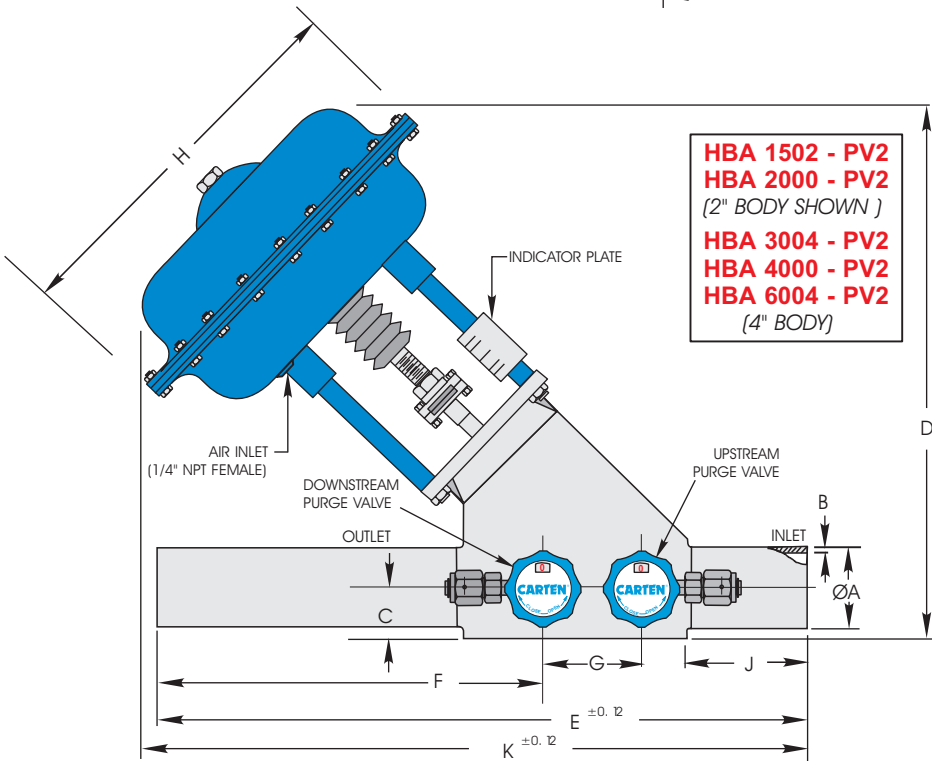
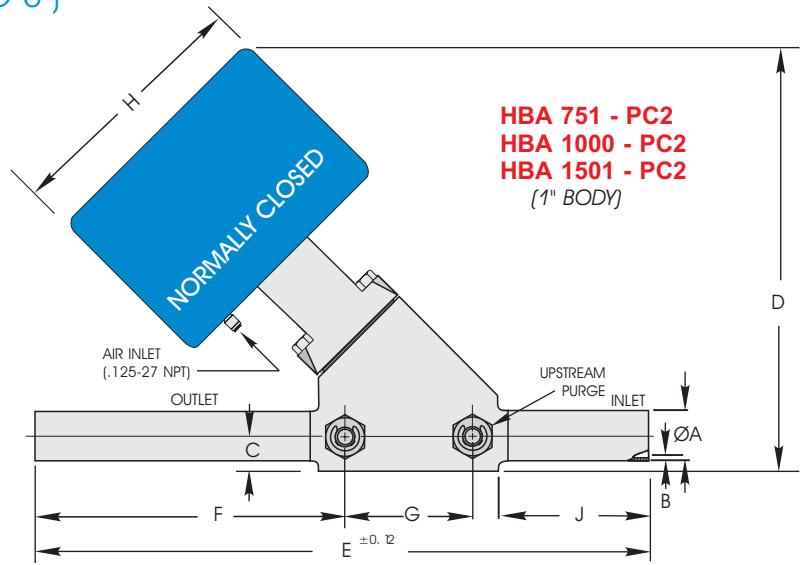
HELIUM LEAK TEST	Inboard/across the seat	1x10 ⁻¹⁰ scc/s He max.	Rated
		1x10 ⁻⁹ scc/s He max.	Std. Production
Helium leak test performed with 100% He			
CLEANLINESS AND PACKAGING	Assembled and tested in CLASS 10 cleanroom. Purged and final packaged in Class 1 cleanroom. Double-bag packaging (2 mil nylon inner bag, 6 mil polyethylene outer bag) with N ₂ gas environment supplied from a liquid source.		
STANDARD FINISH	Electropolished to 10 Ra (0.25 Ra m) on all wetted surfaces		
OPTIONS	Normally open, normally closed, dual acting Limit Switch/Proximity Switch Surface finish - 5 Ra, 20 Ra Particle, moisture, THC and O ₂ testing SEM and ESCA testing, Auger analysis Purge fitting type and location Material: VAR; VIM / VAR, Vespel® seat Handwheel color (Std. Black, GBV White)) JIS tube stubs and tube length Inlet/outlet end connection type		

Specifications are subject to change without notice.
Viton and Vespel are registered trademarks of DuPont Company

HBA SERIES - Valve Dimensions (1/2" TO 6")

Air-actuator Options:

Proximity switches are available on HBA's using the 1" body.
Limit switches are available on all valves using the 2" body and above.



Application notes:
Use 1/4" piping for air supply. Avoid air flow restrictions to optimize actuation speed.

Standard purge connections and purge valve sizes are 1/4".

Model	A*	B*	C	D	E	F	G	H	J	K	Weight
HBA 751-PC2FSM-NC	0.75	0.065	0.75 (19.1mm)	8.99 (228.3mm)	14.55 (369.6mm)	7.57 (192.3mm)	2.5 (63.5mm)	5.9 (149.9mm)	4.03 (102.4mm)	N/A	19.6 Lb 8.9 Kg
HBA1000-PC2FSM-NC	1	0.065	0.75 (19.1mm)	8.99 (228.3mm)	12.57 (319.3mm)	6.58 (167.1mm)	2.5 (63.5mm)	5.9 (149.9mm)	3.04 (77.2mm)	N/A	16.6 Lb 7.5 Kg
HBA 1501-PC2FSM-NC	1.5	0.065	0.75 (19.1mm)	8.99 (228.3mm)	15.19 (385.8mm)	7.27 (184.7mm)	2.5 (63.5mm)	5.9 (149.9mm)	3.97 (100.8mm)	N/A	19.6 Lb 8.9 Kg
HBA 1502-PV2FSM-NC	1.5	0.065	1.25 (31.8mm)	18.03 (458.0mm)	20.54 (521.7mm)	12.09 (307.9mm)	2.50 (63.5mm)	12.47 (316.7mm)	4.96 (125.9mm)	19.92 (506.0mm)	56.3 Lb 25.6 Kg
HBA 2000-PV2FSM-NC	2	0.065	1.25 (31.8mm)	18.03 (458.0mm)	18.5 (469.9mm)	11.09 (281.7mm)	2.5 (63.5mm)	12.47 (316.7mm)	4.04 (102.6mm)	19.92 (506.0mm)	56.3 Lb 25.6 Kg
HBA 3004-PV2FSM-NC	3	0.065	2.12 (53.8mm)	23.5 (596.9mm)	25.52 (648.2mm)	10.39 (263.9mm)	4.25 (108.0mm)	16.54 (420.1mm)	25.46 (646.7mm)	29.03 (737.4mm)	118.7 Lb 53.9 Kg
HBA 4000-PV2FSM-NC	4	0.083	2.12 (53.8mm)	23.5 (596.9mm)	19.85 (504.2mm)	8.55 (217.2mm)	4.25 (108.0mm)	16.54 (420.1mm)	4.46 (113.3mm)	25.2 (640.1mm)	118.7 Lb 53.9 Kg
HBA 6004-PV2FSM-NC	6	0.109	2.12 (53.8mm)	24.26 (616.2mm)	33 (838.2mm)	14.25 (362.0mm)	4.25 (108.0mm)	16.54 (420.1mm)	12.02 (304.3mm)	33 (838.2mm)	130 Lb 59.0 Kg

*Metric tube sizes and wall thicknesses are available on request.

NOTE 1: All tolerances are ±0.06 in. unless otherwise stated

NOTE 2: Dimensional drawings shown are for reference only. Please contact the manufacturer for customer drawings showing updated dimensions.

NOTE 3: Discuss all cycle life applications with your local distributor.