HF SERIES Ultra-High Purity High Flow Bellows Valves

PRODUCT APPLICATIONS

This HF valve series‡ is designed for high performance applications which require high flow rates and superior leak, moisture and particle capabilities. Applications for this valve include:

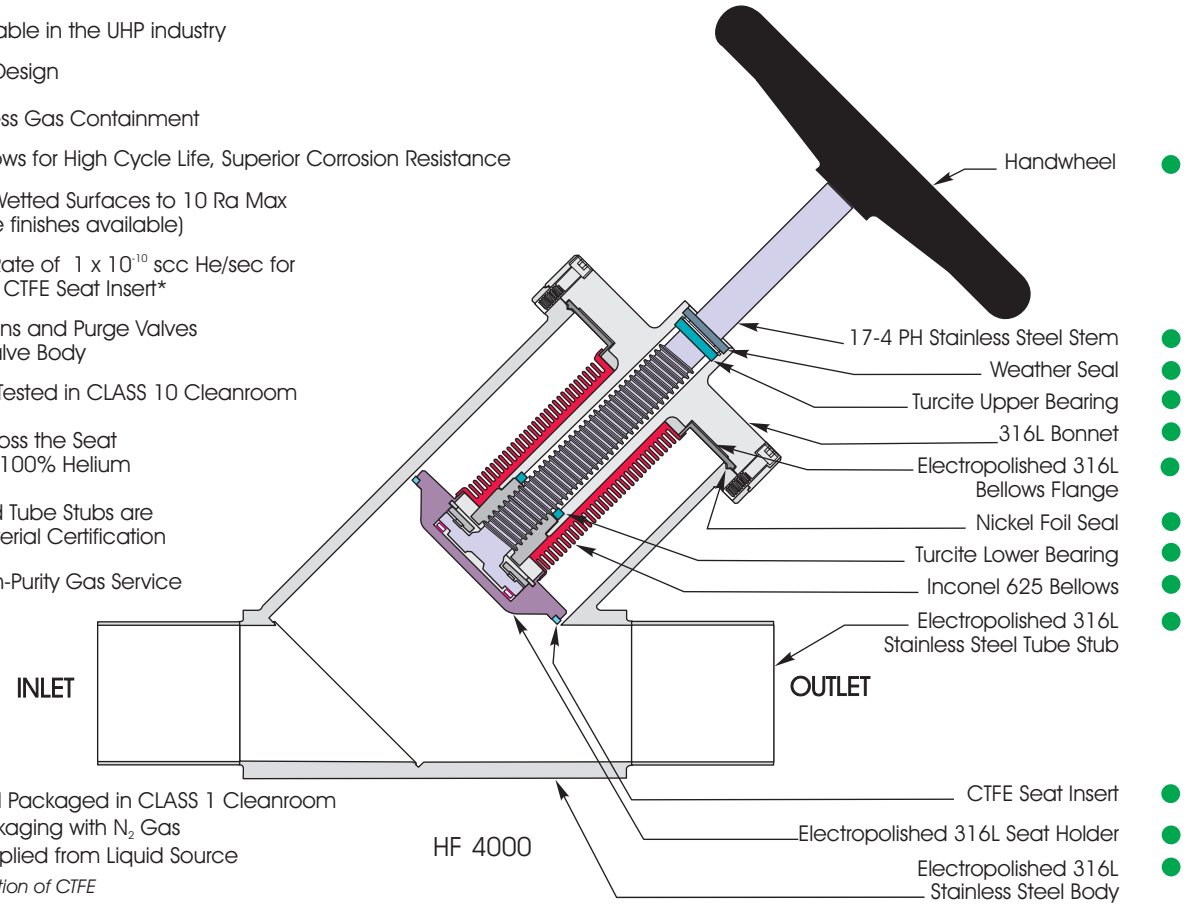
- High-purity gas distribution system control valves
- Superior containment and cleanliness for your most critical valve applications
- Suitable for inert and most toxic gases

PRODUCT FEATURES

- Highest Cv Available in the UHP industry
- Most Compact Design
- High-Purity Stainless Gas Containment
- Inconel 625 Bellows for High Cycle Life, Superior Corrosion Resistance
- Electropolished Wetted Surfaces to 10 Ra Max (Optional surface finishes available)
- Maximum Leak Rate of 1 x 10^{-10} scc He/sec for Bellows Seal and CTFE Seat Insert*
- Purge Connections and Purge Valves are Integral to Valve Body
- Assembled and Tested in CLASS 10 Cleanroom
- Inboard and Across the Seat Leak Tested with 100% Helium
- Valve Bodies and Tube Stubs are Serialized for Material Certification
- Cleaned For High-Purity Gas Service
- Purged and Final Packaged in CLASS 1 Cleanroom Double-Bag Packaging with N_2 Gas Environment Supplied from Liquid Source

**Excluding Permeation of CTFE*

CONSTRUCTION MATERIALS



‡ U.S. Patents - # 5,482,254, # 5,385,334, D 348,096 and other patents worldwide

HF SERIES - Technical Data

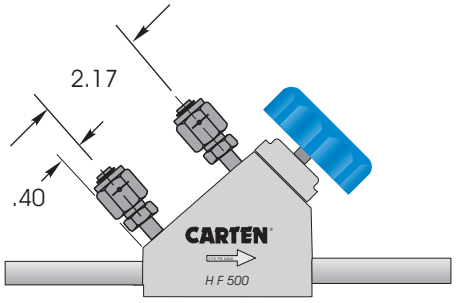
CONSTRUCTION MATERIAL	Wetted Areas	316L Stainless Steel, Inconel 625 Nickel/CTFE
	Non-Wetted Areas	316L Stainless Steel, 17-4 PH Stainless Turcite
MAXIMUM OPERATING PRESSURE	HF Series	Vacuum to 375 psi. (25 BAR)
OPERATING TEMPERATURE RANGE	HF Series	-22° F (-30° C) to 180° F (82°C)
FLOW COEFFICIENT (C_V)	HF 500	5
	HF 751	13
	HF 1000	28
	HF 1501	36
	HF 1502	85
	HF 2000	157
	HF 3002	165
	HF 3004	389
	HF 4000	758
	HF 6004	762

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	Surface finish - 5 Ra, 20 Ra Particle, moisture, THC and O_2 testing SEM and ESCA testing, Auger analysis Fitting type and location Material: VAR; VIM / VAR, Vespel® seat Handwheel color (Std. Black, HF 500 White)) JIS tube stubs and tube length		

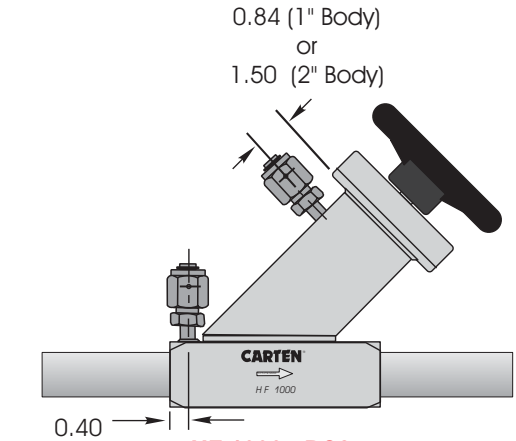
Specifications are subject to change without notice.

Vespel is a registered trademark of the Dupont Company

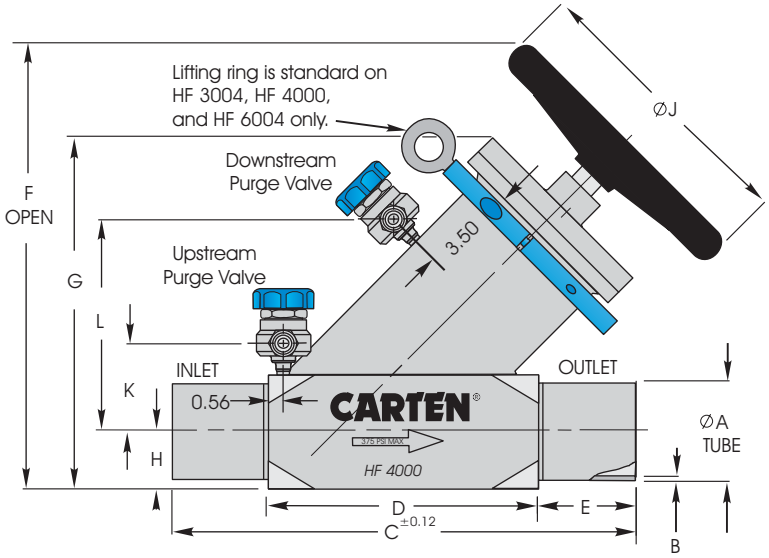
HF SERIES - Valve Dimensions (1/2" TO 6")



HF 500 - PC2



HF 1000 - PC2



HF 4000 - PV25 (shown)

BODY CONFIGURATIONS
1/2" BODY HF 500
1" BODY HF 751, HF 1000, HF 1501
2" BODY HF 1502, HF 2000, HF 3002
4" BODY HF 3004, HF 4000, HF 6004

Standard purge valve connection sizes are:
HF 500, HF 751, HF 1000, and HF 1501 = 1/4" purge connectors
HF 1502 and larger valves = 1/2" purge valves

CAT. NO.	A*	B*	C	D	E	F	G	H	J	K	L	Body Width	Approx. Weight
HF 500	0.50	0.049	9.50 (241.1mm)	3.46 (87.9mm)	3.02 (76.7mm)	4.75 (120.7mm)	3.26 (82.8mm)	0.50 (12.7mm)	2.50 (63.5mm)	1.75 (44.4mm)	3.15 (80.0mm)	1.50 (38.1mm)	3 Lbs (1.4 Kg)
HF 751	0.75	0.065	12.86 (326.6mm)	4.8 (121.9mm)	4.03 (102.4mm)	7.97 (202.4mm)	5.86 (148.8mm)	0.75 (19.1mm)	3.94 (100.1mm)	2.06 (52.3mm)	4.26 (108.2mm)	3.16 (80.3mm)	8 Lbs (3.6 Kg)
HF 1000	1.00	0.065	10.84 (275.3mm)	4.8 (121.9mm)	2.98 (75.7mm)	7.97 (202.4mm)	5.86 (148.8mm)	0.75 (19.1mm)	3.94 (100.1mm)	2.06 (52.3mm)	4.26 (108.2mm)	3.16 (80.3mm)	8 Lbs (3.6 Kg)
HF 1501	1.50	0.065	14.76 (374.9mm)	4.8 (121.9mm)	4.98 (126.5mm)	7.97 (202.4mm)	5.86 (148.8mm)	0.75 (19.1mm)	3.94 (100.1mm)	2.06 (52.3mm)	4.26 (108.2mm)	3.16 (80.3mm)	8 Lbs (3.6 Kg)
HF 1502	1.50	0.065	17.16 (435.9mm)	6.98 (177.3mm)	5.09 (129.3mm)	13.15 (340.0mm)	8.86 (225.0mm)	1.31 (33.3mm)	7.87 (199.9mm)	2.46 (62.5mm)	6.06 (153.9mm)	5.05 (128.3mm)	27 Lbs (12.2 Kg)
HF 2000	2.00	0.065	15.24 (387.1mm)	6.98 (177.3mm)	4.13 (104.9mm)	13.15 (340.0mm)	8.86 (225.0mm)	1.31 (33.3mm)	7.87 (199.9mm)	2.46 (62.5mm)	6.06 (153.9mm)	5.05 (128.3mm)	27 Lbs (12.2 Kg)
HF 3002	3.00	0.065	22.96 (583.2mm)	6.98 (177.3mm)	7.99 (203.0mm)	13.15** (340.0mm)	8.86 (225.0mm)	1.31 (33.3mm)	7.87 (199.9mm)	2.46 (62.5mm)	6.06 (153.9mm)	5.05 (128.3mm)	28 Lbs (12.7 Kg)
HF 3004	3.00	0.065	26.68 (677.7mm)	10.7 (271.8mm)	7.99 (203.0mm)	21.70 (551.2mm)	14.72 (373.9mm)	2.37 (60.2mm)	11.81 (300.0mm)	3.54 (89.9mm)	8.80 (223.5mm)	8.16 (207.3mm)	105 Lbs (47.7 Kg)
HF 4000	4.00	0.083	18.96 (481.6mm)	10.7 (271.8mm)	4.13 (104.9mm)	21.70 (551.2mm)	14.72 (373.9mm)	2.37 (60.2mm)	11.81 (300.0mm)	3.54 (89.9mm)	8.80 (223.5mm)	8.16 (207.3mm)	105 Lbs (47.7 Kg)
HF 6004	6.00	0.109	34.16 (867.7mm)	10.7 (271.8mm)	11.73 (297.9mm)	21.70** (551.2mm)	14.72 (373.9mm)	2.37 (60.2mm)	11.81 (300.0mm)	3.54 (89.9mm)	8.80 (223.5mm)	8.16 (207.3mm)	106 Lbs (48.1 Kg)

*Metric tube sizes and wall thicknesses are available on request.
**Tube (dia. A) projects below bottom surface of valve
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.*

REV. 99-1