



SERIES BZ 91

1 INCH BELLOWS VALVE

Ultra High Flow – Ultra High Purity

- Unique modular flange design
- Two pressure ratings
250 psig (17 bar) 20 C_v and
1,700 psig (117 bar) 12 C_v
- Pre-fab piping made easy, removable flanged tube stubs can be welded separately from valve body
- UHP design and manufacturing
- Lower weight than competitive monoblock designs
- All metal seals to atmosphere
- Field re-buildable and easily replaceable, either seat or entire valve body
- Multi-turn wheel
- Installation and operating instructions available at www.aptech-online.com in the Tech Briefs section

Operating Parameters

Inlet pressure	BZ91T	vacuum to 250 psig (17 bar)
	BZ91U	vacuum to 1,700 psig (117 bar)
Outlet pressure		vacuum to inlet pressure
Proof pressure		1.5 times operating pressure
Burst pressure		3 times operating pressure

Other Parameters

Inlet/outlet connectors		3/4, 1 inch face seal and 3/4, 1 or 1-1/2 inch tube stub
Flow coefficient (C _v)	BZ91T	20
	BZ91U	12
Internal volume		6.66 in. ³ (109.19 cm ³)
Operating temperature		-20° to +160°F (-29° to +71°C)
Surface finish		10 μin Ra (0.25 μm)
Inboard leakage		2 x 10 ⁻¹⁰ sccs
Outboard leakage		2 x 10 ⁻⁹ sccs
Leakage across seat		4 x 10 ⁻⁸ sccs

ENGINEERING DATA — SERIES BZ 91 BELLOWS VALVE

Materials

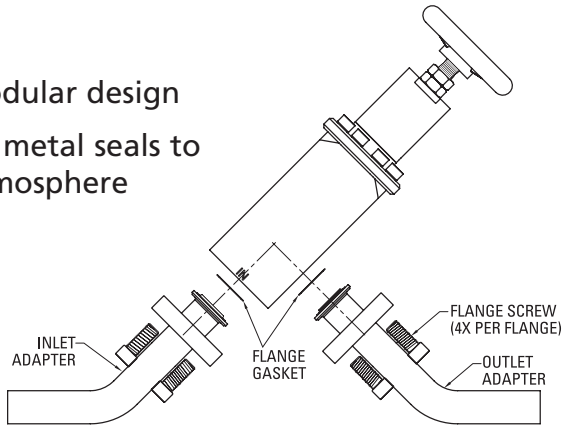
	Series BZ 91T	Series BZ 91U
Wetted Parts		
Body, gasket seals	316L stainless steel	316L stainless steel
Bellows	316L stainless steel	Ni-Cr-Fe alloy/UNS N06600
Seat	PCTFE (Polyimide optional)	PCTFE (Polyimide optional)

All specifications subject to change without notice.

THE ULTIMATE IN ULTRA CLEAN/ULTRA FLOW

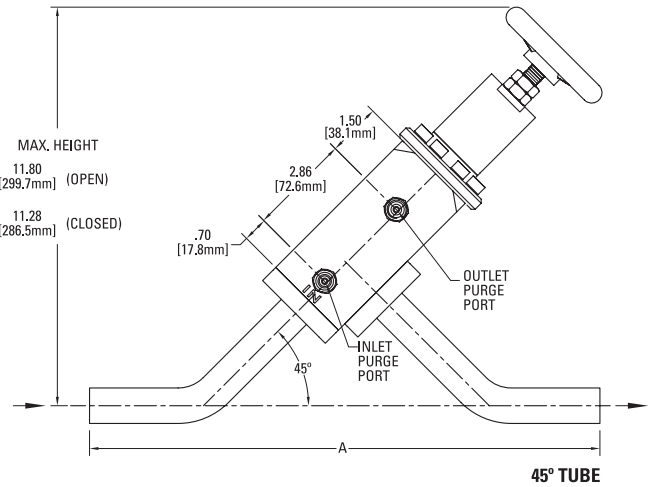
DIMENSIONAL INFORMATION

- Modular design
- All metal seals to atmosphere



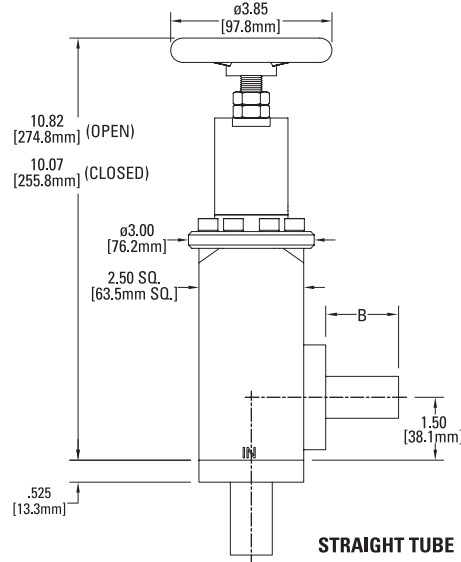
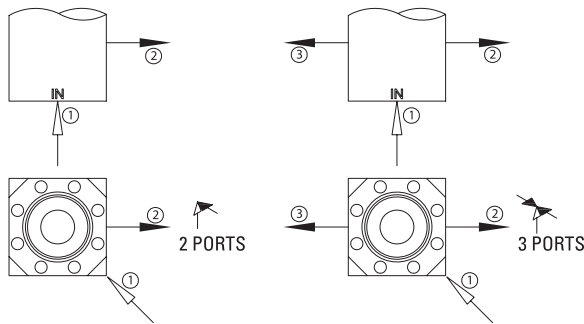
Flanged adapters can be welded to piping prior to installing valve body to allow prefab piping

Tubing Connection	A		B	
	inch ±.12	mm	inch ±.02	mm
3/4 inch	13.48	342.4	1.74	44.2
1 inch	14.39	365.5	1.74	44.2
1-1/2 inch	21.89	556.0	5.49	139.4



45° TUBE

PORTING CONFIGURATIONS



STRAIGHT TUBE

CAUTION: Product selection is the sole responsibility of the user, regardless of any recommendations or suggestions made by the factory. The user shall make selections based upon their own analysis and testing with regard to function, material compatibility and product ratings. Proper installation, operation and maintenance are also required to assure safe, trouble free performance.

ORDERING INFORMATION

Sample Order Number

BZ 91 T M 2P B16 B16 0B

BZ 91 | Series BZ 91 = Bellows valve 1 inch

T | Pressure Rating T = 250 psig (17 bar)
U = 1,700 psig (117 bar)

M | Manual Actuator M = Multi-turn wheel

2P | Ports 2P = 2 ports
3P = 3 ports

B16 B16 | Connections Inlet / Outlet
Port ① / Port ②

0 = No connection installed*
A12 = 3/4 inch straight tube
B12 = 3/4 inch 45° tube
A16 = 1 inch straight tube
B16 = 1 inch 45° tube
A24 = 1-1/2 inch straight tube**
B24 = 1-1/2 inch 45° tube**

Face seal connections available
*0 specified for each port when connection installed by customer, not the factory
**1-1/2 inch connections only available with BZ91T, not available with BZ91U

Outlet Port ③ (optional) Available configurations same as above

0B | Purge Port Inlet / Outlet M = Inlet purge port
B = Outlet purge port
0 = No purge port

Options VS = Polyimide seat

AP Tech has product options and variations which are not documented in data sheets. If you have a model number that is not defined by the ordering information, please consult the factory or your local representative.