

3-Piece High Purity Ball Valves

BHP Series

Introduction

BHP Series 3-piece high purity ball valves are designed to meet the requirements of degreasing, high working pressure, high flow rate and bi-directional flow for the clean dry air (CDA) and bulk gas distribution line, which are widely used in specialty gas, semiconductor and chemical industries.

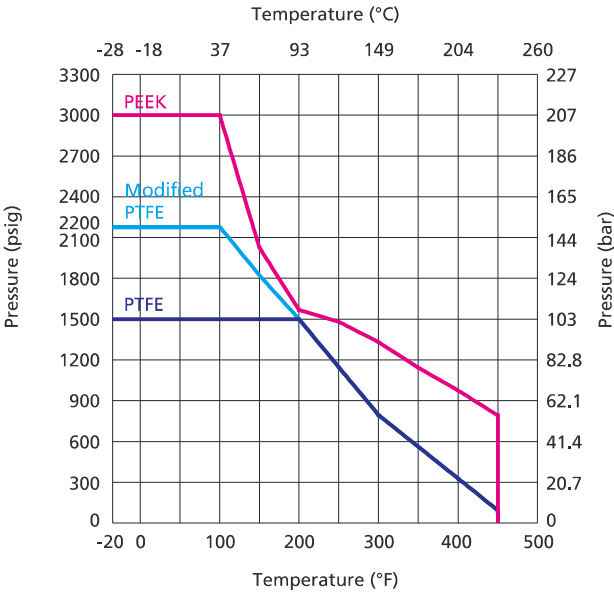


Features

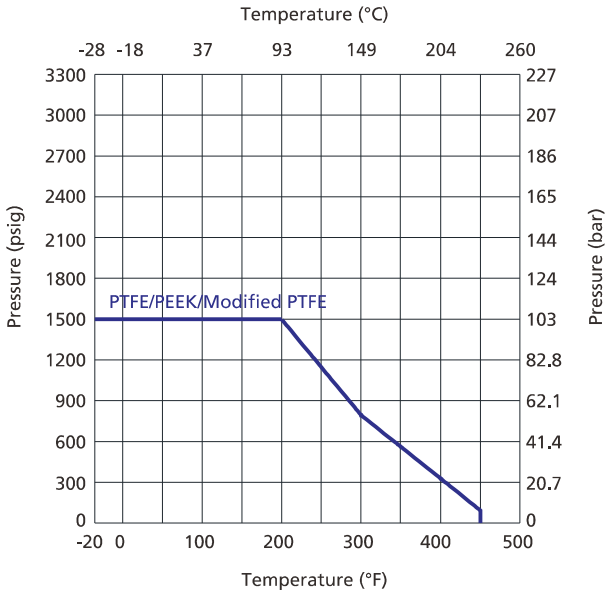
- Working pressure up to: 3000 psig (207 bar)
- Working temperature: -20 °F to 450 °F (-28 °C to 232 °C)
- Orifice sizes: 0.18" (4.6 mm) to 1.5" (38.1 mm)
- Factory tested for leaks with nitrogen or compressed air at rated working pressure, with optional helium leak testing to helium leak rate $\leq 1 \times 10^{-8}$ std-cm³/s

Pressure vs. Temperature

05/07/10/13/22 Orifice



32/38 Orifice



Notes:

- The temperature and pressure rating is based on valves of standard materials.
- Modified PTFE is a modified second generation polytetrafluoroethylene (TFM 1600), which is a PFA and PTFE composite. It has comparable chemical compatibility with PTFE, lower deformation rate than PTFE, and higher pressure and temperature tolerance than PTFE.

Working Pressure of the Weld End at -28 °C to 38 °C

Body Material	End Code	Size	Working Pressure (psig)
CF8M/CF3M	TB4	1/4" × 0.035"	5100
	TB6	3/8" × 0.035"	3300
	TB8	1/2" × 0.049"	3700
	TB12	3/4" × 0.065"	3300
	TB16	1" × 0.065"	2400
	TB24	1 1/2" × 0.065"	1600
	TB32	2" × 0.065"	1200

Note: BHP series high purity ball valves have a maximum working pressure of 3000 psig, which is also limited by the end connection.

Process Specification

Item	Process Specification	
	Special Cleaning and Packaging Process (FC-02)	Ultra High Purity Process (FC-03)
Material	CF8M, CF3M	CF3M
Flow Path Surface Roughness	Ra 25 µin. (0.6 µm)	Ra 10 µin. (0.25 µm)
Process	Machined	Electropolished
Lubrication	Components in contact with the medium are treated with special lubricants that are oxygen- compatible	

Fittings

Valves

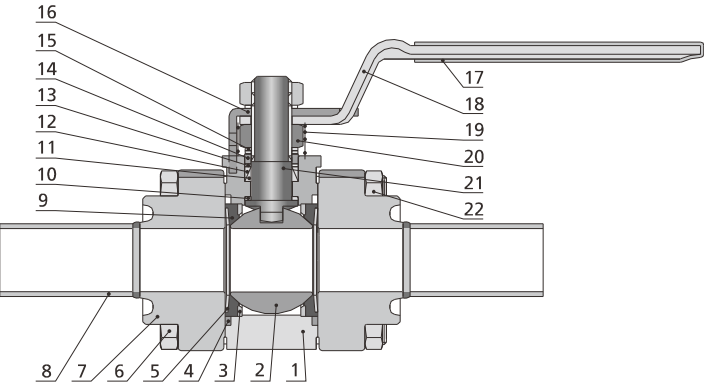
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Major Materials of Construction

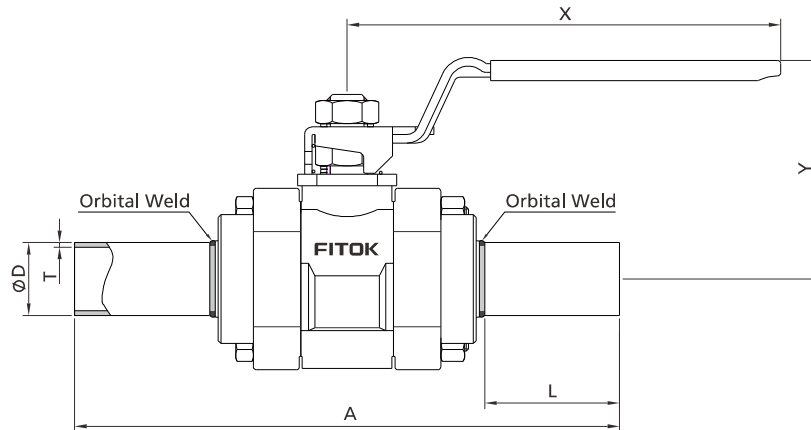


Item	Component	Material/Specification	
1	Body	CF8M/A351	CF3M/A351
2	Ball	316 SS/A479	316L SS/A479
3	Support Ring	316 SS/A240	316L SS/A240
4	Side Seal	PTFE/D1710	
5	Butterfly Spring	Strain Hardened 316 SS/A240	
6	Body Bolt	Gr.B8M/A193	
7	End Cap	CF8M/A351	CF3M/A351
8	Welded Tube	316L SS/A269	
9	Valve Seat	PTFE/Modified PTFE/PEEK	
10	Stem Bearing	PEEK	
11	Lower Packing	PTFE/D1710	
12	Upper Packing	PTFE/D1710	
13	Packing Support	PEEK	
14	Seal Gland	PTFE-coated 316 SS/A479	
15	Stem Spring	Strain Hardened 316 SS/A240	
16	Stop Plate	304 SS/240	
17	Handle Cover	Vinyl Plastic	
18	Handle	304 SS/A240	
19	Grounding Spring	302 SS/A313	
20	Stem Nut	Gr.8M/A194	
21	Stem	316 SS/A479	316L SS/A479
22	Body Nut	Gr.8M/A194	

Note:
Components in contact with the media are listed in italics, for other materials of the valve please contact FITOK Group or authorized agent.

Dimensions

Dimensions in in. (mm) are for reference only and subject to change.



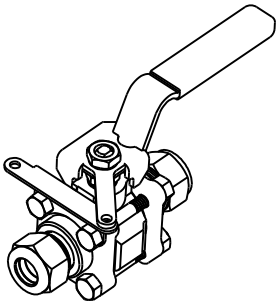
Dimensions, in. (mm)									
Ordering Information	Connection Type and Size	Orifice in. (mm)	Cv	A	L	D	T	X	Y
BHP□□-TB4-05	1/4" × 0.035" Fractional Extended Tube Plain Butt Weld	0.18 (4.6)	1.1	3.54 (90)	0.79 (20)	0.25 (6.35)	0.035 (0.89)	2.37 (60.2)	1.66 (42.2)
BHP□□-FL4-05	1/4" FITOK Tube Fittings	0.19 (4.8)	1.2	3.17 (80.5)	—	—	—		
BHP□□-ML6-05	6 mm FITOK Tube Fittings		2.5						
BHP□□-ML8-05	8 mm FITOK Tube Fittings								
BHP□□-TB6-07	3/8" × 0.035" Fractional Extended Tube Plain Butt Weld	0.28 (7.1)	3.8	3.54 (90)	0.79 (20)	0.375 (9.53)	0.035 (0.89)	2.37 (60.2)	1.66 (42.2)
BHP□□-FL6-07	3/8" FITOK Tube Fittings			3.17 (80.5)	—	—	—		
BHP□□-ML10-07	10 mm FITOK Tube Fittings			3.20 (81.3)					
BHP□□-TB8-10	1/2" × 0.049" Fractional Extended Tube Plain Butt Weld	0.40 (10.2)	7.2	4.72 (120)	1.18 (30)	0.50 (12.7)	0.049 (1.24)	4.50 (114)	2.35 (59.7)
BHP□□-FL8-10	1/2" FITOK Tube Fittings	0.41 (10.4)	7.5	4.04 (103.0)	—	—	—		
BHP□□-ML12-10	12 mm FITOK Tube Fittings								
BHP□□-FL12-13	3/4" FITOK Tube Fittings	0.52 (13.1)	13.6	4.04 (103)	—	—	—	4.50 (114)	2.35 (59.7)
BHP□□-ML16-13	16 mm FITOK Tube Fittings								
BHP□□-ML18-13	18 mm FITOK Tube Fittings								
BHP□□-TB12-22	3/4" × 0.065" Fractional Extended Tube Plain Butt Weld	0.62 (15.7)	18	5.12 (170)	1.42 (40)	0.75 (19.05)	0.065 (1.65)	6.00 (152)	2.94 (74.7)
BHP□□-TB16-22	1" × 0.065" Fractional Extended Tube Plain Butt Weld	0.87 (22.1)	36	6.3 (190)	1.97 (50)	1.00 (25.4)	0.065 (1.65)		
BHP□□-FL16-22	1" FITOK Tube Fittings	0.88 (22.2)	40	5.36 (136)	—	—	—		
BHP□□-FL20-22	1 1/4" FITOK Tube Fittings			6.34 (161)					
BHP□□-ML25-22	25 mm FITOK Tube Fittings			5.36 (136)					
BHP□□-ML28-22	28 mm FITOK Tube Fittings			6.14 (156)					
BHP□□-TB24-32	1 1/2" × 0.065" Fractional Extended Tube Plain Butt Weld	1.25 (31.8)	100	8.59 (218.2)	2.07 (52.6)	1.50 (38.1)	0.065 (1.65)	9.14 (232)	4.03 (102)
BHP□□-TB32-38	2" × 0.065" Fractional Extended Tube Plain Butt Weld	1.50 (38.1)	130	9.03 (229.3)	2.04 (51.8)	2.00 (50.8)			4.16 (103)

1. Sizes and types listed are standard. Other sizes and types are available upon request, please contact FITOK Group or our authorized distributors.

2. Connection tube length can be specified, such as BHPSS-TB4-05, if L=30 mm is required, the part number should be changed to BHPSS-TB4 × L30-05.

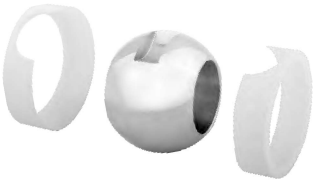
Locking Device

- ⦿ Lock BHP series valves, locking hole diameters of the whole series of valves are 0.20 in. (5 mm)
- ⦿ To order a ball valve with locking device, please refer to the "Ordering Number Description" and add -L to the valve ordering number
Example: BHPSS-FL16-22-L



Low Dead Space Inserts

- ⦿ Reduce fluid entrapment around the ball, stem, and seat when the valve is open or closed
- ⦿ To order a ball valve with low dead space insert, please add -RZ to the valve ordering number
Example: BHPSS-FL4-05-RZ



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