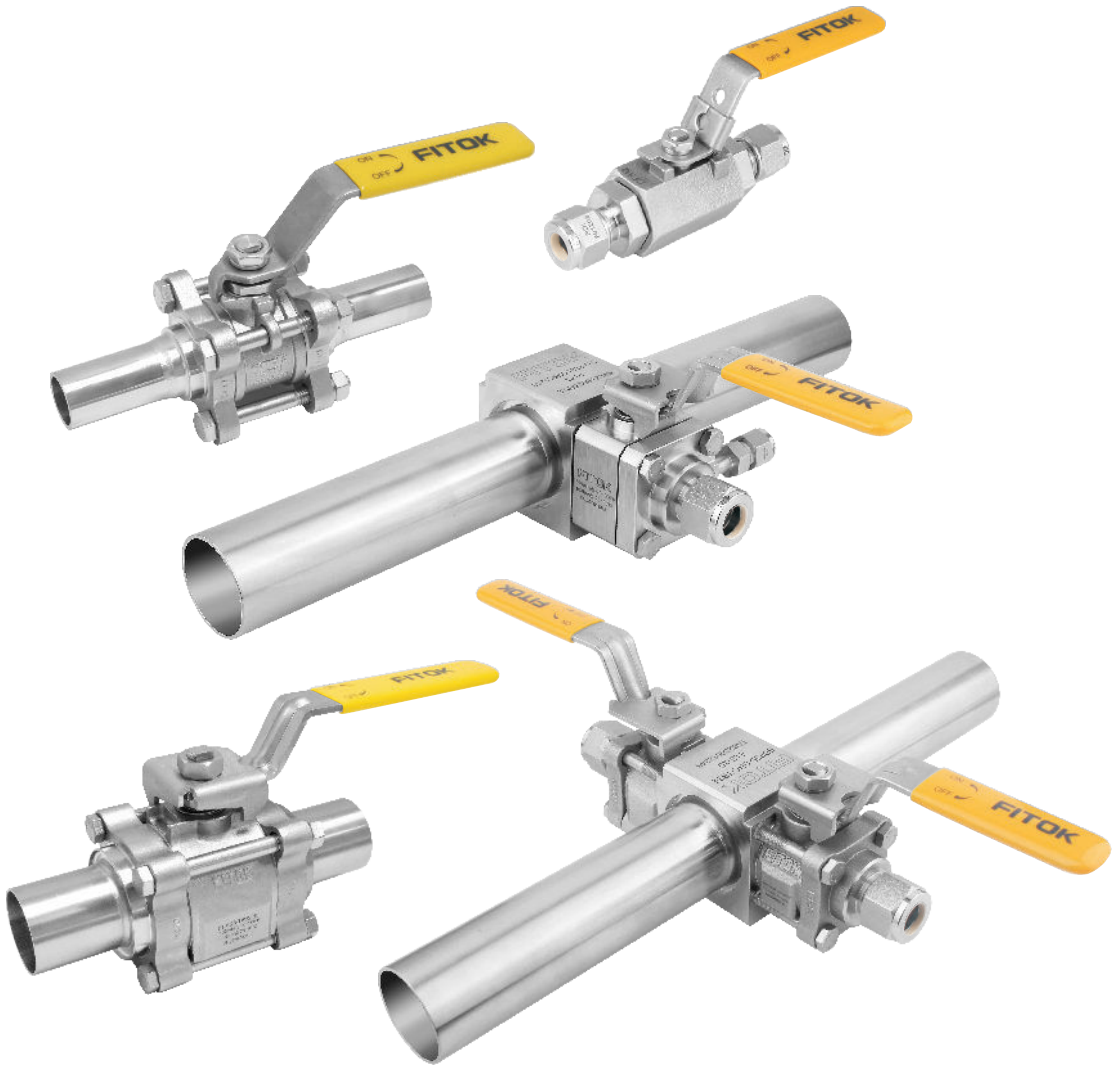
High Purity Ball Valves

BGP, BHP, BDP, BRP Series



High Purity Ball Valves

3-Piece High Purity Ball Valves

BGP Series

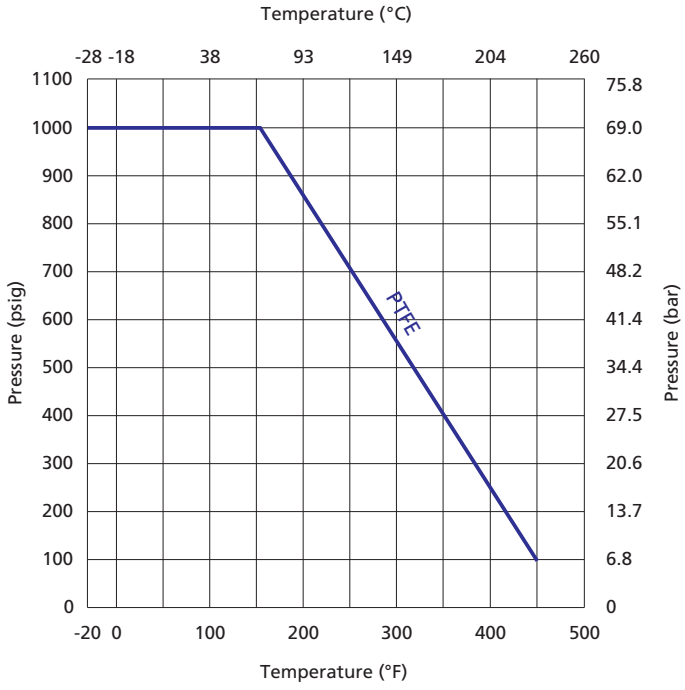
Introduction

FITOK BGP series 3-piece high purity ball valves are designed to meet the requirements of degreasing, low 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: 1000 psig (69.0 bar)
◎ Working temperature: -20 °F to 450 °F (-28 °C to 232 °C)
◎ Orifice sizes: 0.18" (4.6 mm) to 0.79" (20.0 mm)
◎ Standard average internal surface roughness Ra 25 μin. (0.6 μm)
◎ Each valve leak-tested with nitrogen or compressed air at rated working pressure to achieve no visible leakage
◎ Helium leak testing optional, helium leak rate≤$1x10^{-8}$ std cm^3/s
◎ Connection tube in customized length available

Pressure vs. Temperature



Note: The temperature and pressure rating is based on valves of standard materials.

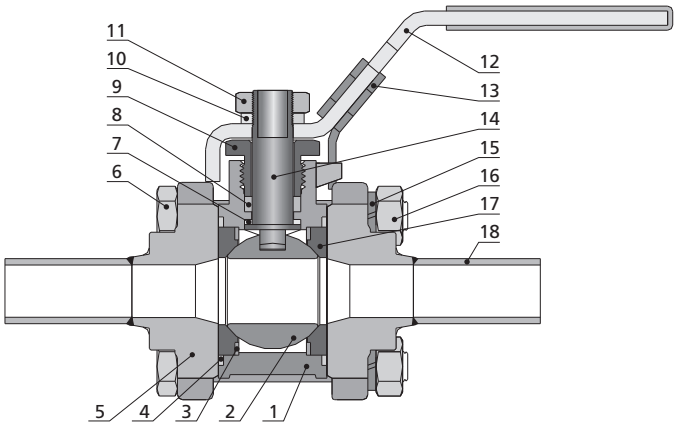
Process Specification

Technology \ Process Specification	Special Cleaning and Packaging (FC-02)	Special Cleaning and Packaging (FOG)
Material/Specification	CF8M/A351 316 SS/ASTM A479 316L SS/A269	
Internal Surface Roughness	Ra 25 μin. (0.6 μm)	
Lubrication	Special lubricant compatible with oxygen is applied to components in contact with the media, for example, DuPont GPL 227	No lubricant on components in contact with the media

Notes:

1. For a detailed description of the process specification, please refer to the process specification catalog.
2. The starting torque of valves with FOG is greater than that of valves with FC-02.

Standard Materials of Construction

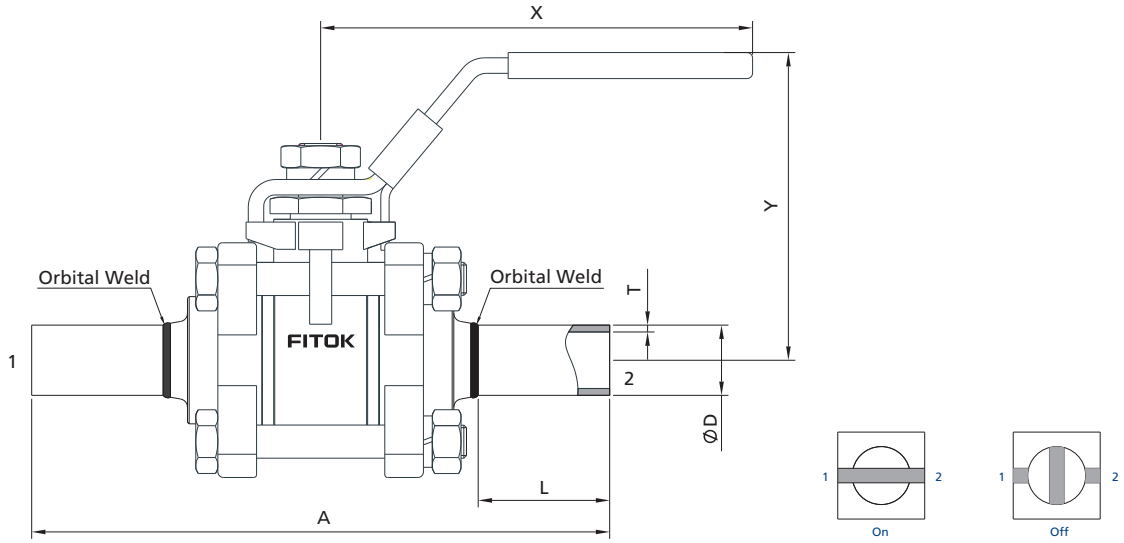


Item	Component	Material
1	*Body*	*CF8M/A351*
2	*Ball*	*316 SS/A479*
3	*Support Ring*	*316 SS/A240*
4	*Side Seal*	*PTFE/D1710*
5	*End Cap*	*CF8M/A351*
6	Body Bolt	Stainless Steel
7	*Stem Bearing*	*PTFE/D1710*
8	*Stem Packing*	*PTFE/D1710*
9	*Packing Gland*	*304 SS/A479*
10	Gasket	Stainless Steel
11	Stem Nut	Stainless Steel
12	Handle	304 SS/A240 (with PVC Sleeve)
13	Lock Block	304 SS/A240
14	*Stem*	*316 SS/A479*
15	Standard Spring Gasket	Stainless Steel
16	Hex Nut	Stainless Steel
17	*Seat*	*PTFE/D1710*
18	*Welded Tube*	*316L SS/A269*

Note: Components in contact with the media are listed in italics. For other materials, please contact FITOK Group or our authorized distributors.

Dimensions

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



Ordering Information	Connection Type and Size	Orifice in. (mm)	Cv	Dimensions, in. (mm)					
				A	L	D	T	X	Y
BGPSS-TB4-05	1/4"×0.035" Fractional Extended Tube Plain Butt Weld	0.18 (4.6)	1.1	3.30 (83.3)	0.81 (20.5)	0.25 (6.35)	0.035 (0.89)	2.69 (68.3)	1.46 (37.0)
BGPSS-FL4-05	1/4" FITOK Tube Fittings	0.19 (4.8)	1.2	2.63 (66.8)	—	—	—		
BGPSS-ML6-05	6 mm FITOK Tube Fittings								
BGPSS-ML8-05	8 mm FITOK Tube Fittings								
BGPSS-TB6-07	3/8"×0.035" Fractional Extended Tube Plain Butt Weld	0.28 (7.1)	3.8	3.30 (83.3)	0.81 (20.5)	0.375 (9.53)	0.035 (0.89)		
BGPSS-FL6-07	3/8" FITOK Tube Fittings			2.63 (66.8)	—	—	—		
BGPSS-ML10-07	10 mm FITOK Tube Fittings								
BGPSS-TB8-11	1/2"×0.049" Fractional Extended Tube Plain Butt Weld	0.40 (10.21)	7.2	4.12 (104.6)	0.93 (23.5)	0.50 (12.7)	0.049 (1.24)	3.94 (100.0)	2.19 (55.7)
BGPSS-FL8-11	1/2" FITOK Tube Fittings	0.42 (10.6)	7.5	4.04 (103.0)	—	—	—		
BGPSS-ML12-11	12 mm FITOK Tube Fittings								
BGPSS-ML14-11	14 mm FITOK Tube Fittings								
BGPSS-FL10-13	5/8" FITOK Tube Fittings	0.5 (12.7)	11.3						
BGPSS-TB12-15	3/4"x0.065" Fractional Extended Tube Plain Butt Weld	0.55 (14.0)	13	5.12 (130.0)	1.26 (32)	0.75 (19.05)	0.065 (1.65)	3.94 (100.0)	2.26 (57.5)
BGPSS-FL12-15	3/4" FITOK Tube Fittings			4.04 (103.0)	—	—	—		
BGPSS-ML18-15	18 mm FITOK Tube Fittings								
BGPSS-TB16-20	1"x0.065" Fractional Extended Tube Plain Butt Weld	0.79 (20.0)	34	6.3 (160.0)	1.67 (42.5)	1.00 (25.4)	0.065 (1.65)	5.18 (131.5)	2.66 (67.5)
BGPSS-FL16-20	1" FITOK Tube Fittings			5.12 (130.0)	—	—	—		
BGPSS-ML22-20	22 mm FITOK Tube Fittings								
BGPSS-ML25-20	25 mm FITOK Tube Fittings								

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 BGPSS-TB4-05, if L=30 mm is required, the part number should be changed to BGPSS-TB4×L30-05.
3. For BGPSS-TB4-05, if no weld seam is allowed at connection, the part number should be changed to BGPSS-TB4-05-SL.

Locking Device

- Lock BGP series valves, locking hole diameters of:
  valves with orifice 05 or 07 are 0.19 in. (4.8 mm);
  valves with orifice 11, 13, 15, or 20 are 0.22 in. (5.7 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: BGPSS-FL8-11-L

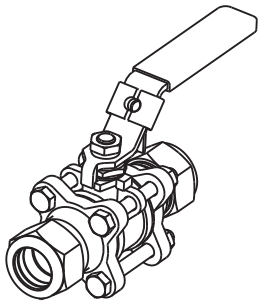


Diagram of Ball Valves with Locking Device and Orifice 05, 07, 11, 13, 15, or 20

Ordering Number Description

BGPSS - TB4 - TB6 - 05 - SL -IL - U1D2 - AR2FOG

Series
BGP

Body Material	
SS	CF8M

Connection 1 Type	
TB	Fractional Extended Tube Plain Butt Weld
FL	Fractional Tube Fitting
ML	Metric Tube Fitting
FR	Integral Male FR Metal Gasket Face Seal Fitting
FO	FO Series O-Ring Face Seal Fitting

Connection 1 Size	
4	1/4" or 1/4"x0.035"
6	3/8" or 3/8"x0.035" or 6 mm
8	1/2" or 1/2"x0.049" or 8 mm
12	3/4" or 3/4"x0.065" or 12 mm
16	1" or 1"x0.065" or 16 mm
25	25 mm

Connection 2 Type / Connection 2 Size	
	Same as Connection 1
	Specified in the same way as the Connection 1

Orifice Size	
05	Maximum 0.19" (4.8 mm)
07	0.28" (7.1 mm)
11	0.42" (10.6 mm)
13	0.50" (12.7 mm)
15	0.55" (14.0 mm)
20	0.79" (20.0 mm)

Structure Type	
	Tube End Seam Weld
SL	Tube End Seamless Weld

Handle	
	Yellow Handle Cover
I	Red Handle Cover
F	Green Handle Cover
J	Blue Handle Cover

Locking Device	
	None
L	Yes

Upstream Purge	
	None
U1	1/4" Tube Fitting with Plug
U2	1/4" Male FR Fitting with Plug

Downstream Purge	
	None
D1	1/4" Tube Fitting with Plug
D2	1/4" Male FR Fitting with Plug

Supplementary Testing	
	None
AR2	Helium Leak Testing

Process Specification	
	FC-02
FOG	FC-02 Without Lubrication

Note: "Ordering Number Description" is a reference to understand the combination rules of FITOK product part number. Not all combinations are available.

High Purity Ball Valves

3-Piece High Purity Ball Valves

BHP Series

Introduction

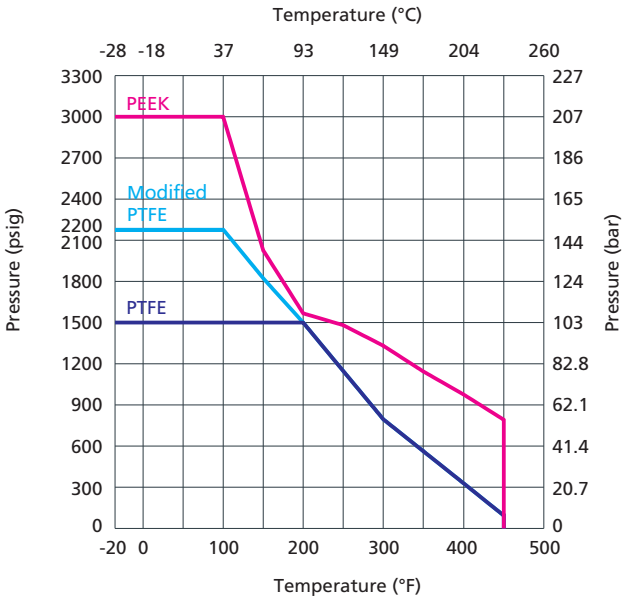
FITOK BHP Series 3-piece high purity ball valves are designed to meet the requirements of degreasing, high working pressure, high flow rate and bi-directional flow for the clean dry air (CDA) and bulk gas distribution line, which are widely used in specialty gas, semiconductor and chemical industries.

Features

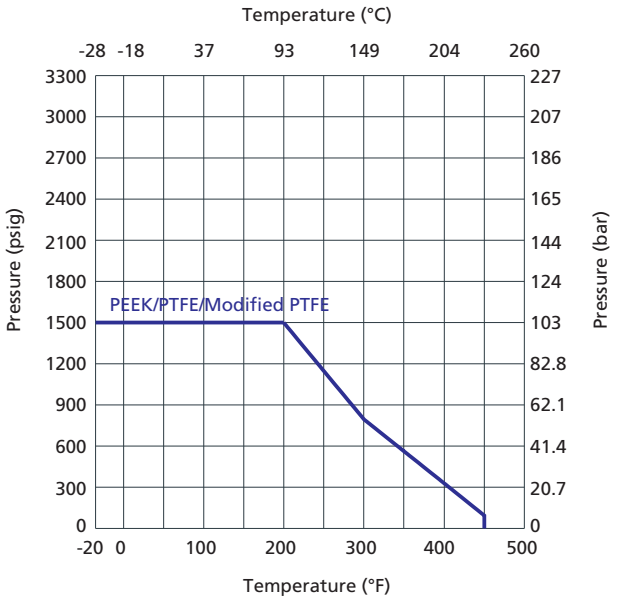
- ◎ Working pressure up to: 3000 psig (207 bar)
- ◎ Working temperature: -20 °F to 450 °F (-28 °C to 232 °C)
- ◎ Orifice sizes: 0.18" (4.6 mm) to 1.5" (38.1 mm)
- ◎ Standard average internal surface roughness Ra 25 μin. (0.6 μm)
- ◎ Each valve leak-tested with nitrogen or compressed air at rated working pressure to achieve no visible leakage
- ◎ Helium leak testing optional, helium leak rate ⩽1x10^{-8} std cm^3/s
- ◎ End connection welded tube in customized length available
- ◎ Pneumatic and electric actuator available

Pressure vs. Temperature

05/07/10/13/22 Orifice



32/38 Orifice



Notes:
1. The temperature and pressure rating is based on valves of standard materials.
2. 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

Valve Material	End Code	Size	Working Pressure psig
316 SS	TB4	1/4"x0.035"	5100
	TB6	3/8"x0.035"	3300
	TB8	1/2"x0.049"	3700
	TB12	3/4"x0.065"	3300
	TB16	1"x0.065"	2400
	TB24	1 1/2"x0.065"	1600
	TB32	2"x0.065"	1200

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

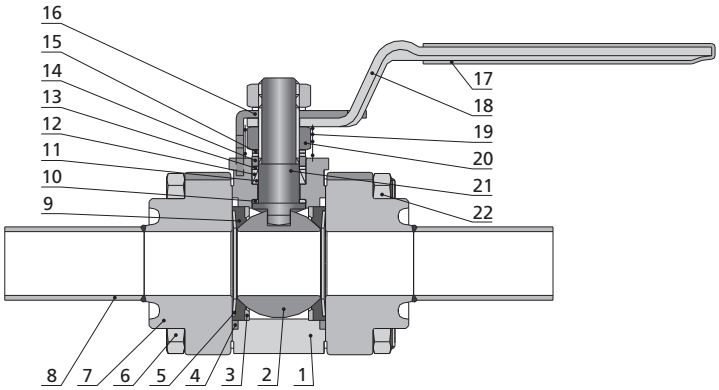
Process Specification

Technology \ Process Specification	Special Cleaning and Packaging (FC-02)	Special Cleaning and Packaging (FOG)
Material/Specification	CF8M/A351 316 SS/ASTM A479 316L SS/A269	
Internal Surface Roughness	Ra 25 μin. (0.6 μm)	
Lubrication	Special lubricant compatible with oxygen is applied to components in contact with the media, for example, DuPont GPL 227	No lubricant on components in contact with the media

Notes:

1. For a detailed description of the process specification, please refer to the process specification catalog.
2. The starting torque of valves with FOG is greater than that of valves with FC-02.

Standard Materials of Construction

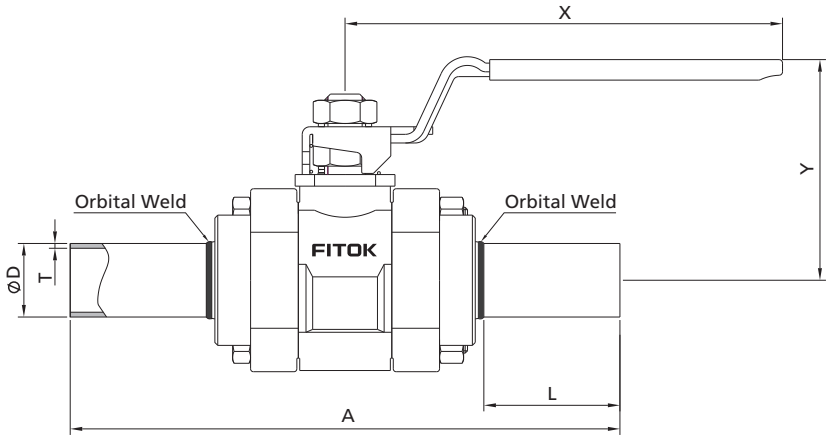


Item	Component	Material
1	*Body*	*CF8M/A351*
2	*Ball*	*316 SS/A479*
3	*Support Ring*	*316 SS/A240*
4	*Side Seal*	*PTFE/D1710*
5	*Butterfly Spring*	*Strain Hardened 316 SS/A240*
6	Body Bolt	Gr.B8M/A193
7	*End Cap*	*CF8M/A351*
8	*Welded Tube*	*316L/A269*
9	*Valve Seat*	*PTFE/Modified PTFE/PEEK*
10	*Stem 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*
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.

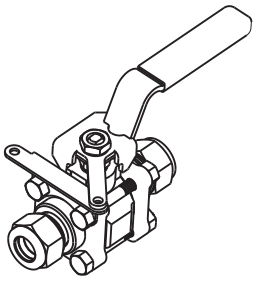


Ordering Information	Connection Type and Size	Orifice in. (mm)	Cv	Dimensions, in. (mm)					
				A	L	D	T	X	Y
BHPSS-TB4-05	1/4"×0.035" Fractional Extended Tube Plain Butt Weld	0.18 (4.6)	1.1	3.54 (90)	0.79 (20)	0.25 (6.35)	0.035 (0.89)	2.37 (60.2)	1.66 (42.2)
BHPSS-FL4-05	1/4" FITOK Tube Fittings	0.19 (4.8)	1.2	3.17 (80.5)	—	—	—		
BHPSS-ML6-05	6 mm FITOK Tube Fittings								
BHPSS-ML8-05	8 mm FITOK Tube Fittings		2.5						
BHPSS-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)
BHPSS-FL6-07	3/8" FITOK Tube Fittings			3.17 (80.5)	—	—	—		
BHPSS-ML10-07	10 mm FITOK Tube Fittings			3.20 (81.3)					
BHPSS-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)
BHPSS-FL8-10	1/2" FITOK Tube Fittings	0.41 (10.4)	7.5	4.04 (103.0)	—	—	—		
BHPSS-ML12-10	12 mm FITOK Tube Fittings								
BHPSS-FL12-13	3/4" FITOK Tube Fittings	0.52 (13.1)	13.6	4.04 (103)	—	—	—	4.50 (114)	2.35 (59.7)
BHPSS-ML16-13	16 mm FITOK Tube Fittings								
BHPSS-ML18-13	18 mm FITOK Tube Fittings								
BHPSS-TB12-22	3/4"x0.065" 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)
BHPSS-TB16-22	1"x0.065" 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)		
BHPSS-FL16-22	1" FITOK Tube Fittings	0.88 (22.2)	40	5.36 (136)	—	—	—		
BHPSS-FL20-22	1 1/4" FITOK Tube Fittings			6.34 (161)					
BHPSS-ML25-22	25 mm FITOK Tube Fittings			5.36 (136)					
BHPSS-ML28-22	28 mm FITOK Tube Fittings			6.14 (156)					
BHPSS-TB24-32	1 1/2"x0.065" 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)
BHPSS-TB32-38	2"x0.065" Fractional Extended Tube Plain Butt Weld	1.50 (38.1)	130	9.03 (229.3)	2.04 (51.8)	2.00 (50.8)	0.065 (1.65)		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



Ordering Number Description

BHPSS - FL8 - ML12 - P13 - CHQL - U1D1 - AR2FOG

Series

BHP	

Body Material

SS	CF8M

Connection 2 Type / Connection 2 Size

	Same as Connection 1
Specified in the same way as the Connection 1	

Connection 1 Type

TB	Fractional Extended Tube Plain Butt Weld
FL	Fractional Tube Fittings
ML	Metric Tube Fittings
FR	Integral Male FR Metal Gasket Face Seal Fittings
FO	FO Series O-Ring Face Seal Fitting

Valve Seat Material

	PTFE
P	PEEK
M	Modified PTFE

Orifice Size

05	Maximum 0.19" (4.8 mm)
07	0.28" (7.1 mm)
10	0.41" (10.4 mm)
13	0.52" (13.1 mm)
22	0.88" (22.2 mm)
32	1.25" (31.8 mm)
38	1.5" (38.1 mm)

Connection 1 Size

4	1/4" or 1/4"×0.035"
6	3/8" or 3/8"×0.035" or 6 mm
8	1/2" or 1/2"×0.049" or 8 mm
12	3/4" or 3/4"×0.065" or 12 mm
16	1" or 1"×0.065" or 16 mm
24	1 1/2" or 1 1/2"×0.065"
32	2" or 2"×0.065" or 32 mm

Handle/Actuator

	Yellow Handle Cover
I	Red Handle Cover
F	Green Handle Cover
J	Blue Handle Cover
C	90° Normally Closed Pneumatic Actuator
O	90° Normally Open Pneumatic Actuator
D	90° Double Acting Pneumatic Actuator
E	90° Electric Actuator

Actuator Accessory

	None
H	Mechanical limit switch
N	Inductive limit switch
Q	Solenoid Valve
HQ	Mechanical limit switch and solenoid valve
NQ	Inductive limit switch and solenoid valve

Locking Device

	None
L	Yes

Upstream Purge

	None
U1	1/4" Tube Fitting with Plug
U2	1/4" Male FR Fitting with Plug

Downstream Purge

	None
D1	1/4" Tube Fitting with Plug
D2	1/4" Male FR Fitting with Plug

Supplementary Testing

	None
AR2	Helium Leak Testing

Process Specification

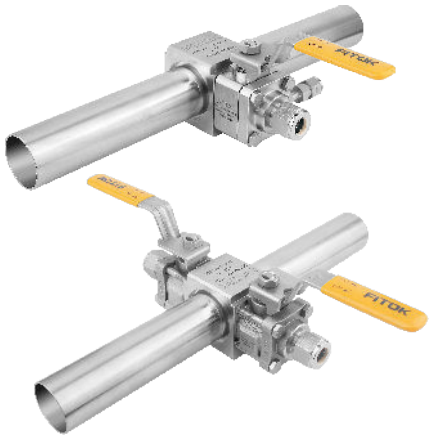
	FC-02
FOG	FC-02 Without Lubrication

Notes:
1. "Ordering Number Description" is a reference to understand the combination rules of FITOK product part number. Not all combinations are available.
2. The PEEK seat material and the FOG process cannot be selected at once.

High Purity Ball Valves

Distribution Block Valves

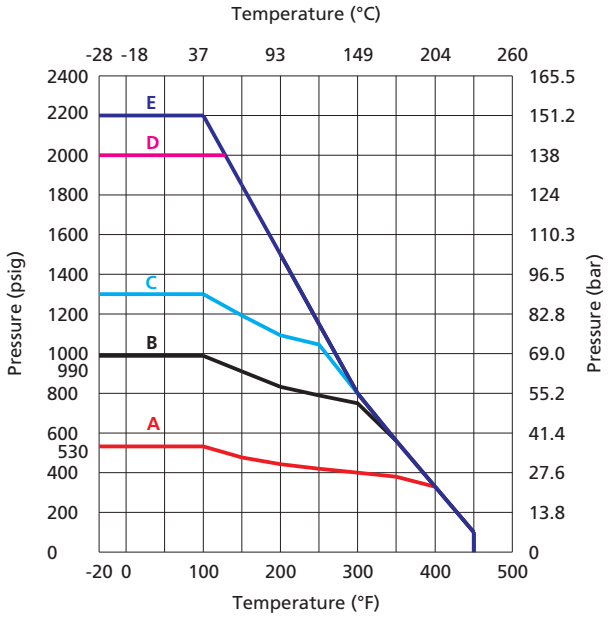
BDP Series



Features

- ◎ Working temperature: -20 °F to 450 °F (-28 °C to 232 °C)
- ◎ Main line tube is full bore
- ◎ Main line Tube with orbital welding
- ◎ Branch ball valves are BHP series 3-piece high purity ball valves
- ◎ Standard average internal surface roughness Ra 25 µin. (0.6 µm)
- ◎ Each valve leak-tested with nitrogen or compressed air at rated working pressure to achieve no visible leakage
- ◎ Helium leak testing optional, helium leak rate $\leqslant 1x10^{-8}$ std cm^3/s
- ◎ Main line tube and branch line ball valves available in different sizes

Pressure vs. Temperature



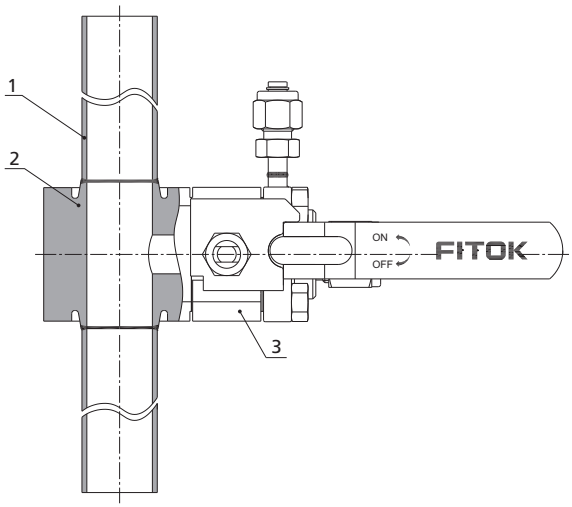
Main Line Tube Size in (mm)	4x0.083	2x0.065	1 1/2x0.065	1x0.065	3/4x0.065 1/2x0.049
Orifice Code	38, 32	13, 10	13, 10, 07	13, 10, 07	05, 07
Temperature and Pressure Curve	A	B	C	D	E

Process Specification

Technology \ Process Specification	Special Cleaning and Packaging (FC-02)	Special Cleaning and Packaging (FOG)
Material/Specification	316L SS/A269 316 SS/ASTM A479	
Internal Surface Roughness	Ra 25 μin. (0.6 μm)	
Lubrication	Special lubricant compatible with oxygen is applied to components in contact with the media, for example, DuPont GPL 227	No lubricant on components in contact with the media

Notes:
1. For a detailed description of the process specification, please refer to the process specification catalog.
2. The starting torque of valves with FOG is greater than that of valves with FC-02.

Materials of Construction



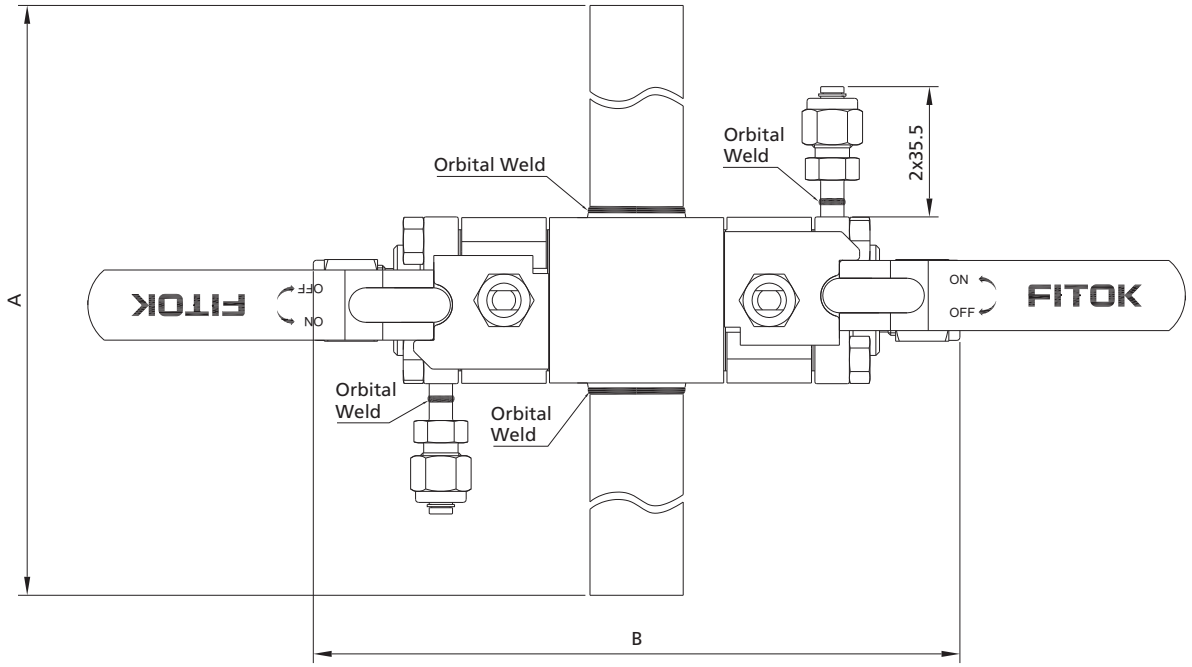
Item	Component		Material
1	*Main Line Tube*		*316 L SS/A269*
2	*Valve block*		*316 L SS/A479*
3	*Branch Ball Valve*	*Body*	*CF8M/A351*
		Seat	*Modified PTFE*

Notes:
Components in contact with the media are listed in italics. Branch ball valves are BHP series, and other parts not listed are the same materials as BHP series standard valve parts.

Ordering information and dimensions

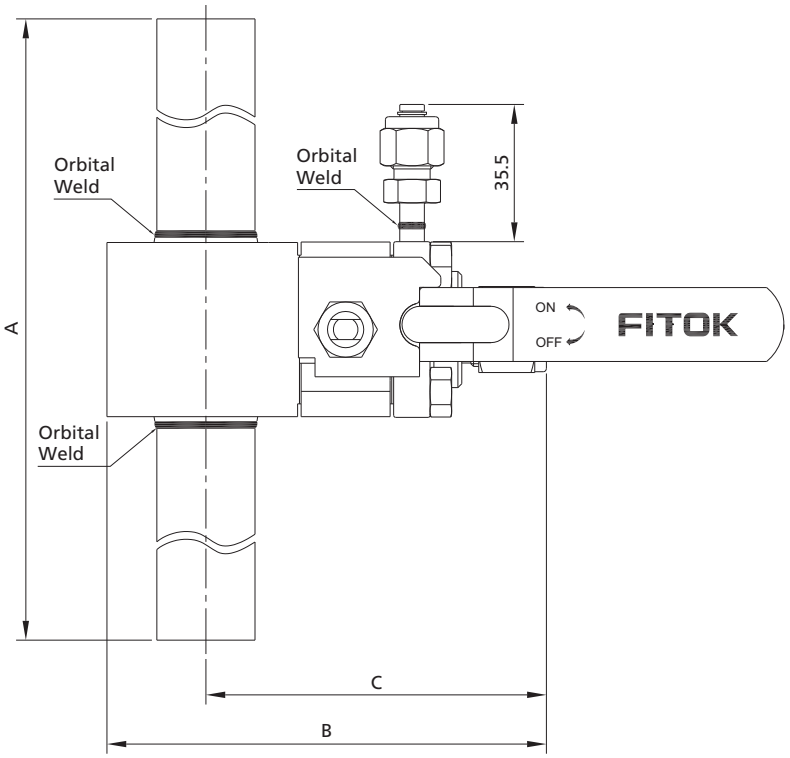
Please refer to BHP series for the dimensions of branch ball valves.
Dimensions are indicated in in. (mm), only for reference and subject to change.

Double Horizontal Cross



Ordering information	Main line tube size in. (mm)	Branch line tube end size	Orifice in. (mm)	Dimensions, in. (mm)	
				A	B
BDPSS-DHC-TB8-FL4-05-D1	1/2×0.049	1/4 in.	0.187 (4.8)	7.00 (178)	5.19 (132)
BDPSS-DHC-TB8-FL6-07-D1		3/8 in.	0.281 (7.1)		
BDPSS-DHC-TB12-FL4-05-D1	3/4×0.065	1/4 in.	0.187 (4.8)	9.00 (229)	5.19 (132)
BDPSS-DHC-TB12-FL6-07-D1		3/8 in.	0.281 (7.1)		
BDPSS-DHC-TB16-FL6-07-D1	1×0.065	3/8 in.	0.281 (7.1)	13.0 (330)	6.69 (170)
BDPSS-DHC-TB16-FL8-10-D1		1/2 in.	0.411 (10.4)		6.88 (175)
BDPSS-DHC-TB16-FL12-13-D1		3/4 in.	0.516 (13.1)		
BDPSS-DHC-TB24-FL6-07-D1	1 1/2x0.065	3/8 in.	0.281 (7.1)	13.0 (330)	6.94 (176)
BDPSS-DHC-TB24-FL8-10-D1		1/2 in.	0.411 (10.4)		7.13 (181)
BDPSS-DHC-TB24-FL12-13-D1		3/4 in.	0.516 (13.1)		
BDPSS-DHC-TB32-FL8-10-D1	2x0.065	1/2 in.	0.411 (10.4)	13.0 (330)	8.19 (208)
BDPSS-DHC-TB32-FL12-13-D1		3/4 in.	0.516 (13.1)		
BDPSS-DHC-TB64-FL24-32-D1	4x0.083	1 1/2 in.	1.250 (31.8)	23.0 (584)	14.4 (365)
BDPSS-DHC-TB64-FL32-38-D1		2 in.	1.500 (38.1)		17.2 (437)

Single Horizontal Cross



Ordering information	Main line tube size in. (mm)	Branch line tube end size	Orifice in. (mm)	Dimensions, in. (mm)		
				A	B	C
BDPSS-SHC-TB8-FL4-05-D1	1/2×0.049	1/4 in.	0.187 (4.8)	7.00 (178)	3.31 (84.1)	2.56 (65.0)
BDPSS-SHC-TB8-FL6-07-D1		3/8 in.	0.281 (7.1)			
BDPSS-SHC-TB12-FL4-05-D1	3/4×0.065	1/4 in.	0.187 (4.8)	9.00 (229)	3.31 (84.1)	2.56 (65.0)
BDPSS-SHC-TB12-FL6-07-D1		3/8 in.	0.281 (7.1)			
BDPSS-SHC-TB16-FL6-07-D1	1×0.065	3/8 in.	0.281 (7.1)	13.0 (330)	4.31 (109)	3.31 (84.1)
BDPSS-SHC-TB16-FL8-10-D1		1/2 in.	0.411 (10.4)		4.44 (113)	3.44 (87.4)
BDPSS-SHC-TB16-FL12-13-D1		3/4 in.	0.516 (13.1)			
BDPSS-SHC-TB24-FL6-07-D1	1 1/2x0.065	3/8 in.	0.281 (7.1)	13.0 (330)	4.56 (116)	3.44 (87.4)
BDPSS-SHC-TB24-FL8-10-D1		1/2 in.	0.411 (10.4)		4.69 (119)	6.56 (90.4)
BDPSS-SHC-TB24-FL12-13-D1		3/4 in.	0.516 (13.1)			
BDPSS-SHC-TB32-FL8-10-D1	2x0.065	1/2 in.	0.411 (10.4)	13.0 (330)	5.97 (152)	4.06 (103)
BDPSS-SHC-TB32-FL12-13-D1		3/4 in.	0.516 (13.1)			
BDPSS-SHC-TB64-FL24-32-D1	4x0.083	1 1/2 in.	1.250 (31.8)	23.0 (584)	10.2 (259)	7.19 (183)
BDPSS-SHC-TB64-FL32-38-D1		2 in.	1.500 (38.1)		11.6 (295)	8.63 (219)

Ordering Number Description

BDPSS - SHC - TB24 - FL8 - 10 - I - D1 - AR2FOG

Series	Body Material	
BDP	SS	CF8M

Structure Type	
SHC	Single Horizontal Cross
DHC	Double Horizontal Cross

Main Tube Connection Type	
TB	Fractional Extended Tube Plain Butt Weld

Main Tube Connection Size	
8	1/2"x0.049"
12	3/4"x0.065"
16	1"x0.065"
24	1 1/2"x0.065"
32	2"x0.065"
64	4"x0.083"

Branch Tube Ball Valve Connection Type	
FL	Fractional Tube Fittings

Branch Tube Ball Valve Connection Size	
4	1/4"
6	3/8"
8	1/2"
12	3/4"
16	1"
24	1 1/2"
32	2"

Branch Tube Ball Valve Orifice Size	
05	Maximum 0.19" (4.8 mm)
07	0.28" (7.1 mm)
10	0.41" (10.4 mm)
13	0.52" (13.1 mm)
22	0.88" (22.2 mm)
32	1.25" (31.8 mm)
38	1.5" (38.1 mm)

Handle	
	Yellow Handle Cover
I	Red Handle Cover
F	Green Handle Cover
J	Blue Handle Cover

Branch Tube Ball Valve Purge	
	None
D1	1/4" Tube Fitting with Plug

Supplementary Testing	
	None
AR2	Helium Leak Testing

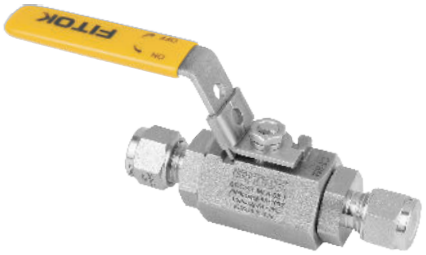
Process Specification	
	FC-02
FOG	FC-02 Without Lubrication

Note: "Ordering Number Description" is a reference to understand the combination rules of FITOK product part number. Not all combinations are available.

High Purity Ball Valves

Hex Bar Stock High Purity Ball Valves

BRP Series



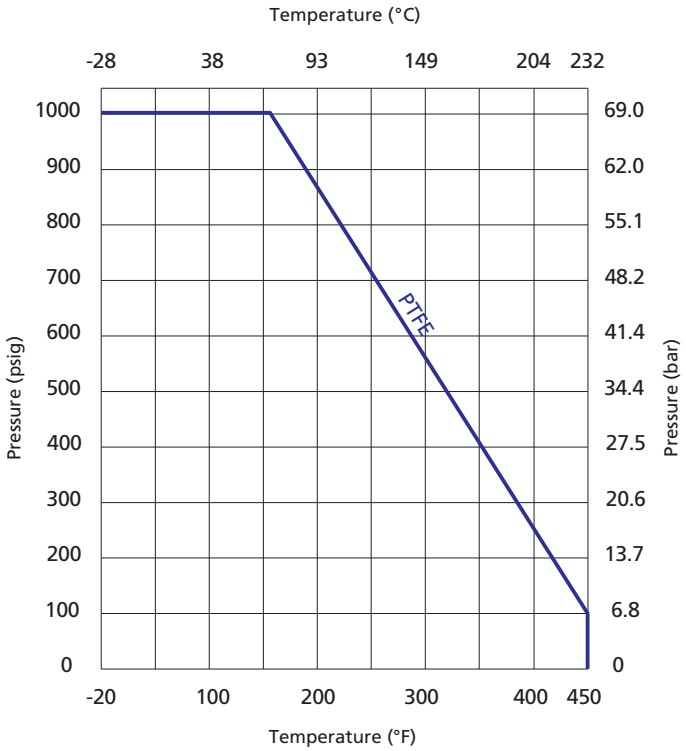
Introduction

FITOK BRP series hex bar high purity ball valves are designed to meet the requirements of degreasing, low working pressureand 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: 1000 psig (69.0 bar)
- ◎ Working temperature: -20 °F to 450 °F (-28 °C to 232 °C)
- ◎ Orifice sizes: 0.19" (4.8 mm) to 0.35" (8.9 mm)
- ◎ Standard average internal surface roughness Ra 25 μin. (0.6 μm)
- ◎ Each valve leak-tested with nitrogen or compressed air at rated working pressure to achieve no visible leakage
- ◎ Helium leak testing optional, helium leak rate≤$1x10^{-8}$ std cm^3/s

Pressure vs. Temperature



Note: The temperature and pressure rating is based on valves of standard materials.

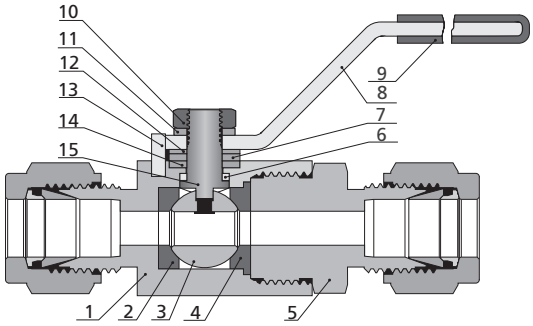
Process Specification

Technology \ Process Specification	Special Cleaning and Packaging (FC-02)	Special Cleaning and Packaging (FOG)
Material/Specification	316 SS/ASTM A479	
Internal Surface Roughness	Ra 25 μin. (0.6 μm)	
Lubrication	Special lubricant compatible with oxygen is applied to components in contact with the media, for example, DuPont GPL 227	No lubricant on components in contact with the media

Notes:

1. For a detailed description of the process specification, please refer to the process specification catalog.
2. The starting torque of valves with FOG is greater than that of valves with FC-02.

Standard Materials of Construction

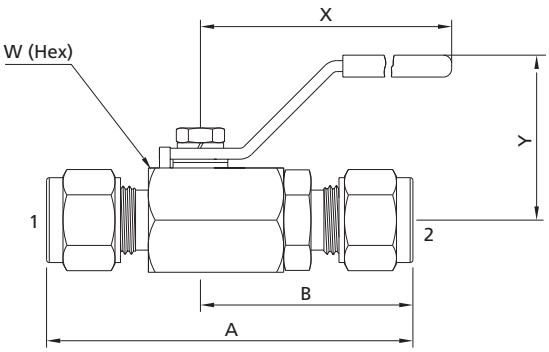


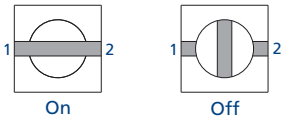
Item	Component	Material
1	*Body*	*316 SS/A479*
2	*Front Seat*	*PTFE/D1710*
3	*Ball*	*316 SS/A479*
4	*Back Seat*	*PTFE/D1710*
5	*End Connection*	*316 SS/A479*
6	*Lower Packing*	*PTFE/D1710*
7	Washer	316 SS/A479
8	Handle	304 SS/A240
9	Sleeve	Vinyl
10	Stem Nut	Stainless Steel
11	Gasket	Stainless Steel
12	Coned-Disc Spring	304 SS/A240
13	Stop Pin	Stainless Dteel
14	*Upper Packing*	*PTFE/D1710*
15	*Stem*	*316 SS/A479*

Notes: Components in contact with the media are listed in italics. For other materials, please contact FITOK Group or our authorized distributors.

Dimensions

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





Basic Ordering Number	Connection Type and Size		Orifice in. (mm)	Cv	Dimensions, in. (mm)				
	Connection 1	Connection 2			A	B	W	X	Y
BRP□□-ML6-05	6 mm FITOK		0.19 (4.8)	1.25	2.75 (65.2)	1.50 (38.1)	3/4 (38.1)	2.36 (60.0)	1.18 (30.0)
BRP□□-ML8-05	8 mm FITOK				2.63 (66.8)	1.53 (38.8)			
BRP□□-FL4-05	1/4" FITOK				2.57 (65.2)	1.50 (38.1)			
BRP□□-ML10-07	10 mm FITOK		0.28 (7.1)	2.50	2.78 (72.9)	1.68 (42.7)	7/8 (22.23)		1.26 (32.0)
BRP□□-FL6-07	3/8" FITOK								
BRP□□-ML12-10	12 mm FITOK		0.35 (8.9)	9.25	3.15 (80.0)	1.83 (46.5)	1 1/16 (27.0)	3.15 (80.0)	1.54 (39.0)
BRP□□-ML14-10	14 mm FITOK				3.24 (82.2)	1.87 (47.5)			
BRP□□-FL8-10	1/2" FITOK				3.15 (80.0)	1.83 (46.5)			
BRP□□-FL10-10	5/8" FITOK				3.24 (82.2)	1.87 (47.5)			

1. FITOK refers to FITOK double ferrule tube fittings.
2. Sizes and types listed are standard. Other sizes and types are available upon request, please contact FITOK Group or our authorized distributors.

Ordering Number Description

BRPSS - ML8 - FL4 - 05 - UL - AR2FOG

Series
BRP

Body Material	
SS	316 SS
6L	316L SS

Connection 1 Type	
FL	Fractional Tube Fitting
ML	Metric Tube Fitting
FR	Integral Male FR Metal Gasket Face Seal Fitting
FO	FO Series O-Ring Face Seal Fitting

Connection 1 Size	
4	1/4"
6	3/8" or 6 mm
8	1/2" or 8 mm
12	3/4" or 12 mm
14	14 mm

Connection 2 Type / Connection 2 Size	
	Same as Connection1
	Specified in the same way as Connection 1

Orifice	
05	0.19" (4.8 mm)
07	0.28" (7.1 mm)
10	0.35" (8.9 mm)

Handle	
	Yellow Handle Cover
I	Red Handle Cover
J	Blue Handle Cover
U	Black Aluminium Handle
NY	Black Nylon Handle
T	Butterfly Handle with Yellow Plastic Handle Sleeve
TI	Butterfly Handle with Red Plastic Handle Sleeve
TJ	Butterfly Handle with Blue Plastic Handle Sleeve

Locking Device	
	None
L	Yes

Supplementary Testing	
	None
AR2	Helium Leak Testing

Process Specification	
	FC-02
FOG	FC-02 Without Lubrication

Note: "Ordering Number Description" is a reference to understand the combination rules of FITOK product part number.
Not all combinations are available.