

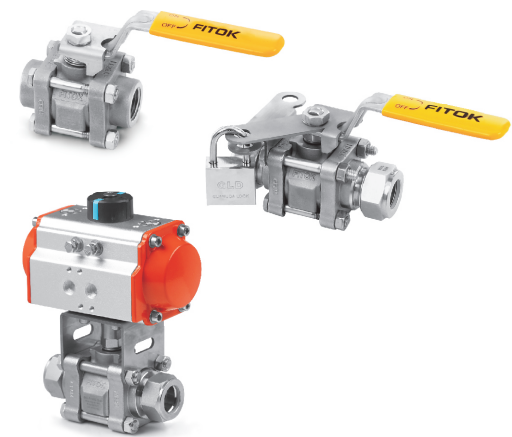
3-piece Ball Valves

BH Series

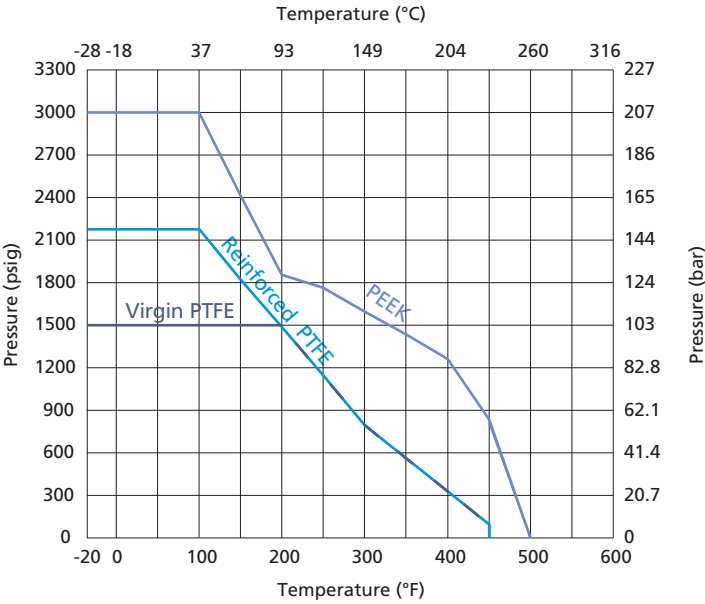
2-way Valves

Features

- Maximum working pressure: 3000 psig (207 bar)
- Working temperatures: -20°F to 450°F (-28°C to 232°C)
- End connections:
 - 1/8 to 2 thread
 - 1/8 to 2 pipe butt or socket weld
 - 1/2" to 2" and 12 mm to 50 mm tube butt or socket weld
 - 1/2" to 2" and 12 mm to 38 mm tube fitting
- 3-piece precision cast body construction
- Body materials: CF8M (316), CF3M (316L), CF8 (304) and CF3 (304L)
- Seat materials: PTFE, RPTFE and PEEK
- Packing materials: RPTFE, Graphite and O-ring
- Orifice sizes: 0.19" (4.8 mm) to 1.5" (38.1 mm)
- Pneumatic and electric actuator available
- Fire-safe design available



Pressure vs. Temperature

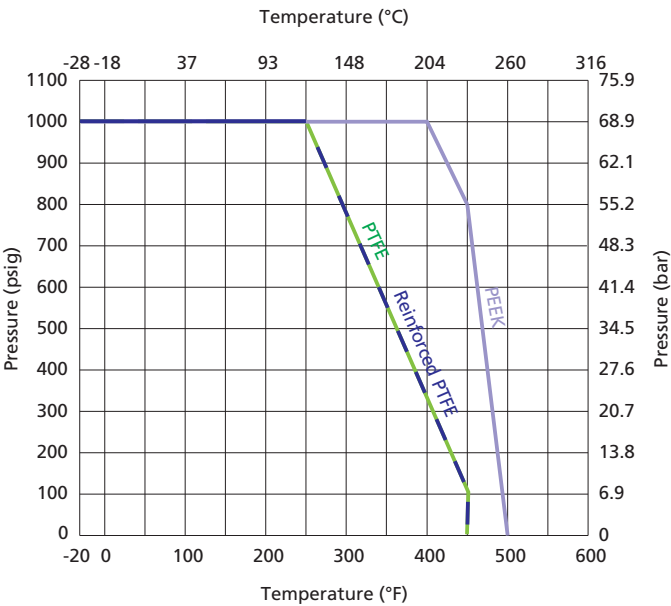


3-way Valves

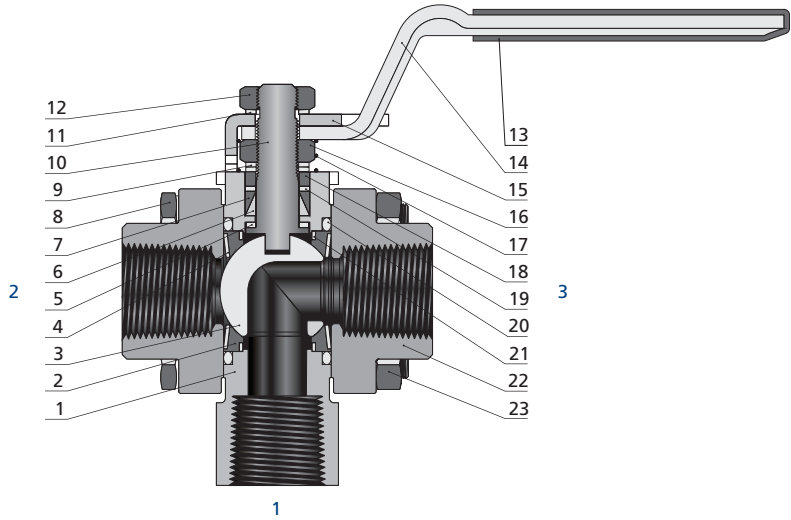
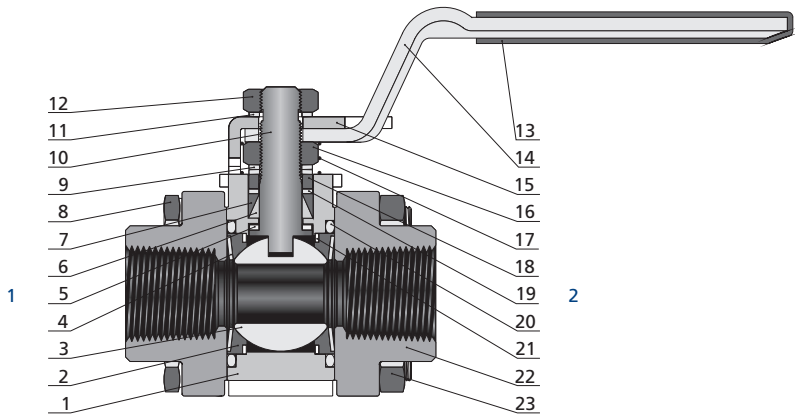
Features

- Maximum working pressure: 1000 psig (68.9 bar)
- Working temperature: -20°F to 450°F (-28°C to 232°C)
- End connections:
 - 1/4 to 2 thread
 - 1/4" to 2" and 12 mm to 38 mm tube fitting
- One-piece center body without welding
- 180° actuation
- Inlet and outlet for 3-way valve: connection 1 as inlet, connection 2 and connection 3 as outlet
- Leak-tight performance testing for every valve at the maximum working pressure with nitrogen

Pressure vs. Temperature



Standard Materials of Construction



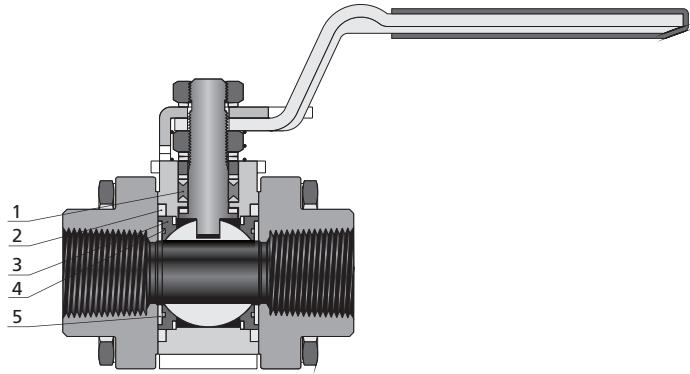
Item	Component	Valve Body Material			
		Material Grade/ASME Specification			
1	Body	CF8M/A351	CF3M/A351	CF8/A351	CF3/A351
2	Seat	PTFE/D1710			
3	Ball	316 SS/A276			
4	Coned-disc Spring	Strain-hardened 316 SS/A240			
5	Stem Bearing	PEEK (Polyetheretherketone)			
6	Lower Packing	Reinforced PTFE			
7	Upper Packing	Reinforced PTFE			
8	Body Bolt	Gr. B8M/A193			
9	Stem Spring	Strain-hardened 316 SS/A240			
10	Stem	316 SS/A479			
11	Stem Spring	Strain-hardened 316 SS/A240			
12	Stem Nut	Gr. 8M/A194			
13	Handle Sleeve	Vinyl			
14	Handle	304 SS/A240			
15	Stop Plate	304 SS/A240			
16	Stem Nut	Gr. 8M/A194			
17	Grounding Spring	302 SS/A313			
18	Gland	PTFE-coated 316 SS/B783			
19	Packing Support	PEEK (Polyetheretherketone)			
20	Flange Seal	Fluorocarbon FKM			
21	Support Ring	316 SS/A240			
22	Flange	CF8M/A351	CF3M/A351	CF8/A351	CF3/A351
23	Body Nut	Gr.8M/A194			
Lubricants		Silicone-based and PTTE-based			

Other materials available upon request

Fire-safe Application

Features

- Maximum working pressure: 2200 psig (152 bar)
- Working temperature: -20°F to 400°F (-28°C to 204°C)
- Live-loaded Graphite stem packing
- High strength metal stem bearing
- Encased 8-bolt construction
- Graphite flange seals and seat seals
- Fire-safe valves are designed, tested to meet the requirement of API 607 4th edition

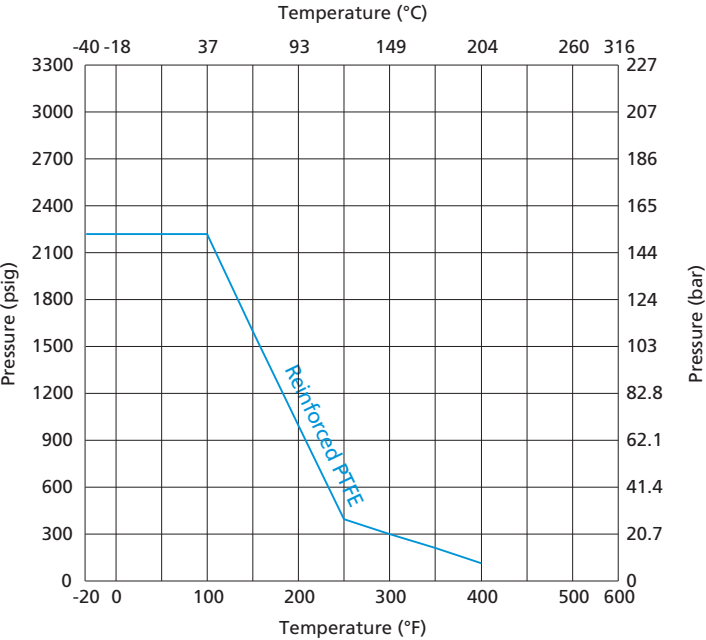


Standard Materials of Construction

Item	Component	Valve Body Material			
		CF8M/A351	CF3M/A351	CF8/A351	CF3/A351
1	Packing	Graphite			
2	Flange Seal	Graphite with 316 SS wire			
3	Seat	Reinforced PTFE			
4	Seat Ring	Graphite with 316 SS wire			
5	Coned-disc spring	Grafoil-lined 316 SS/A167			

All other components are same as general application.

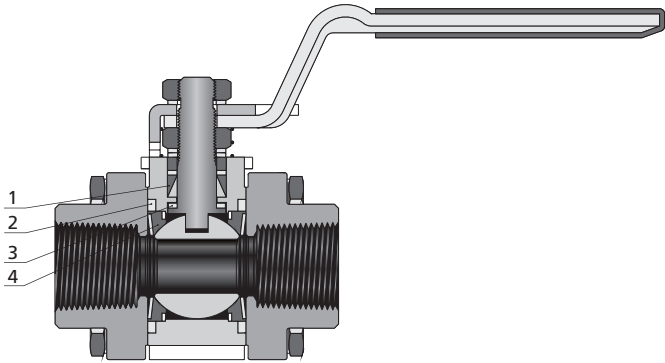
Pressure vs. Temperature



Steam Service

Features

- Maximum working pressure: 2500 psig (172 bar)
- Working temperature: -20°F to 600°F (-28°C to 316°C)
- Encased 8-bolt construction
- Graphite flange seals
- PEEK seats and stem seals

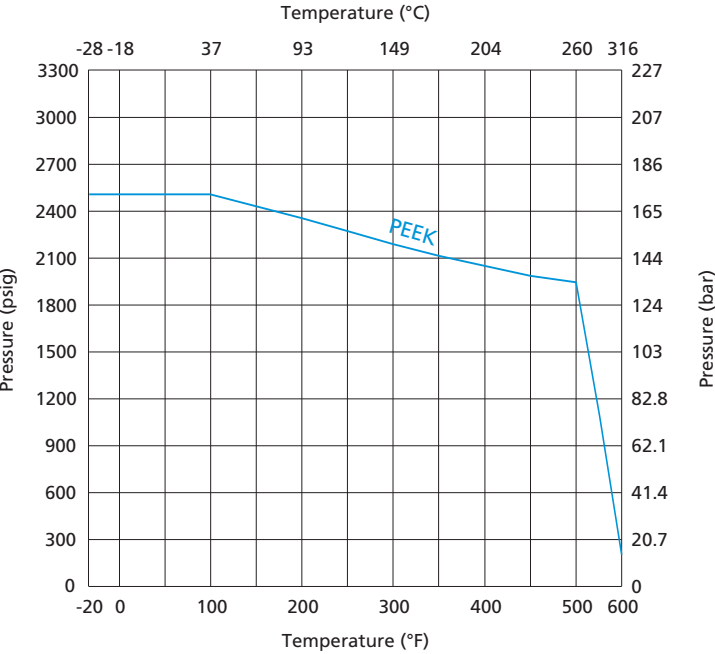


Materials of Construction

Item	Component	Valve Body Material			
		CF8M/A351	CF3M/A351	CF8/A351	CF3/A351
1	Packing	Molybdenum disulfide-coated PEEK			
2	Flange seal	Graphite with 316 SS			
3	Stem bearing	Molybdenum disulfide-coated PEEK			
4	Seat	Molybdenum disulfide-coated PEEK			
Lubricant		PTFE-based			

All other components are same as general application.

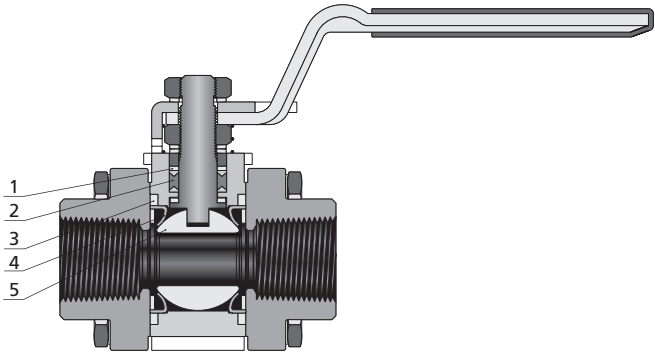
Pressure vs. Temperature



Thermal Service

Features

- Maximum working pressure: 1000 psig (68.9 bar)
- Working temperature: -65°F to 850°F (-54°C to 454°C)
- Spring-loaded metal seats
- Encased 8-bolt Construction

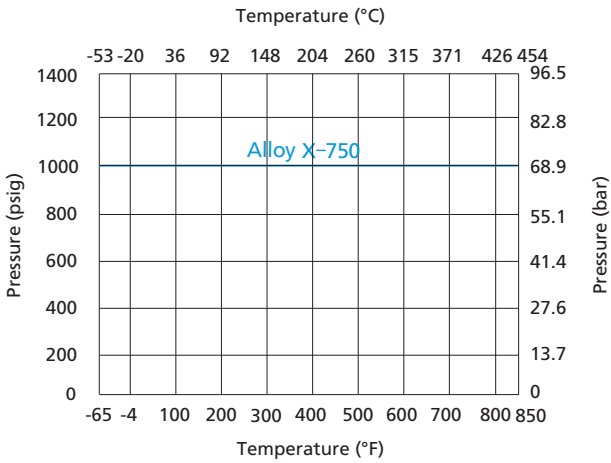


Materials of Construction

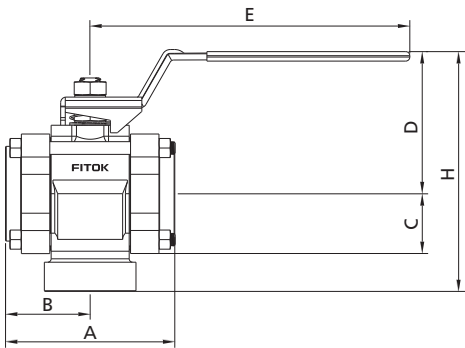
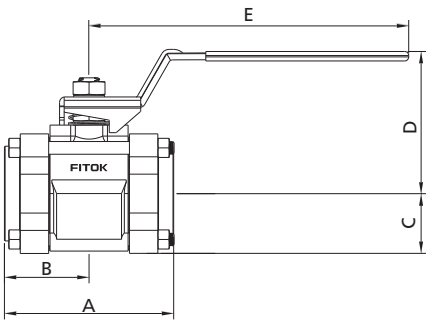
Item	Component	Valve Body Material			
		CF8M/A351	CF3M/A351	CF8/A351	CF3/A351
1	Packing bearing	Alloy X-750 /AMS 5542			
2	Packing	Graphite with 316 SS			
3	Flange seal	Graphite with 316 SS			
4	Seat	Alloy X-750 /AMS 5542			
5	Ball	S17400 SS/A564			
Lubricant		Fluorinated tungsten disulfide			

All other components same as general application.

Pressure vs. Temperature



Dimensions

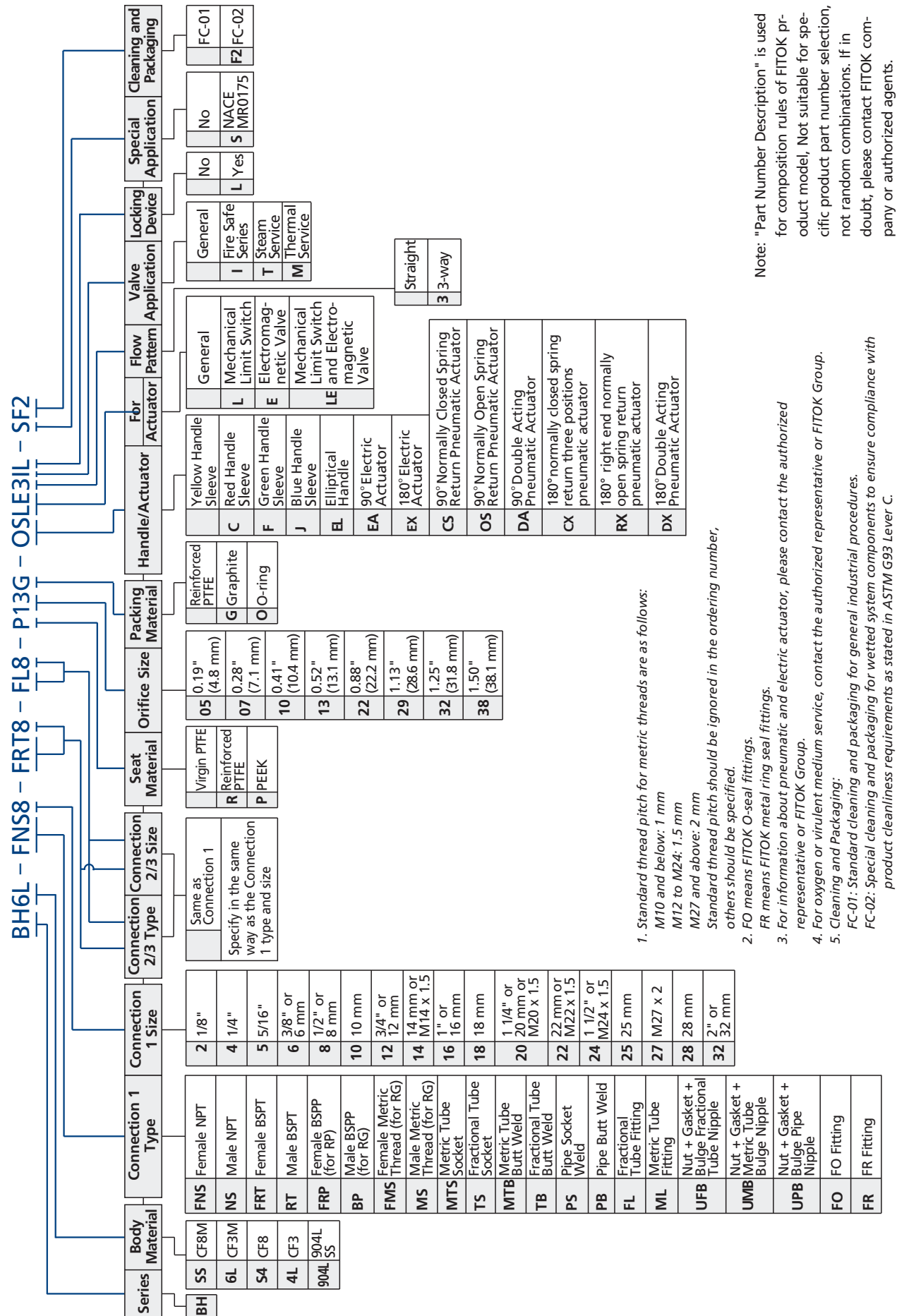


Basic Ordering Number		Connection Type and Size		Orifice in. (mm)	Cv	Dimension, in. (mm)								
Straight	3-way	Connection 1	Connection 2/3			A	B	C	D	E	H			
BH□□-FL4-05	BH□□-FL4-05-3	1/4" FITOK	1/4" FITOK	0.19 (4.8)	1.2	3.17 (80.5)	1.59 (40.4)	0.68 (17.3)	1.66 (42.2)	2.37 (60.2)	3.35 (85.1)			
BH□□-ML6-05	BH□□-ML6-05-3	6 mm FITOK	6 mm FITOK											
BH□□-ML8-05	BH□□-ML8-05-3	8 mm FITOK	8 mm FITOK											
BH□□-TS4-05	BH□□-TS4-05-3	1/4" TS	1/4" TS			2.16 (54.9)	1.08 (27.4)				—			
BH□□-MTS6-05	BH□□-MTS6-05-3	6 mm MTS	6 mm MTS											
BH□□-PB4-05	BH□□-PB4-05-3	1/4 PB	1/4 PB											
BH□□-FNS2-07	BH□□-FNS2-07-3	1/8 Female NPT	1/8 Female NPT	0.28 (7.1)	3.8	2.16 (54.9)	1.08 (27.4)	0.68 (17.3)	1.66 (42.2)	2.37 (60.2)	3.12 (79.2)			
BH□□-FRT2-07	BH□□-FRT2-07-3	1/8 Female BSPT	1/8 Female BSPT											
BH□□-FRP2-07	BH□□-FRP2-07-3	1/8 Female BSPP	1/8 Female BSPP											
BH□□-FNS4-07	BH□□-FNS4-07-3	1/4 Female NPT	1/4 Female NPT											
BH□□-FRT4-07	BH□□-FRT4-07-3	1/4 Female BSPT	1/4 Female BSPT											
BH□□-FRP4-07	BH□□-FRP4-07-3	1/4 Female BSPP	1/4 Female BSPP											
BH□□-FL5-07	BH□□-FL5-07-3	5/16" FITOK	5/16" FITOK			3.17 (80.5)	1.59 (40.4)				4.37 (111)			
BH□□-FL6-07	BH□□-FL6-07-3	3/8" FITOK	3/8" FITOK											
BH□□-ML10-07	BH□□-ML10-07-3	10 mm FITOK	10 mm FITOK											
BH□□-TS6-07	BH□□-TS6-07-3	3/8" TS	3/8" TS			2.16 (54.9)	1.08 (27.4)				—			
BH□□-PB6-07	BH□□-PB6-07-3	3/8 PB	3/8 PB											
BH□□-FL8-10	BH□□-FL8-10-3	1/2" FITOK	1/2" FITOK											
BH□□-ML12-10	BH□□-ML12-10-3	12 mm FITOK	12 mm FITOK	0.41 (10.3)	7.5	4.04 (103)	2.02 (51.3)	0.89 (22.6)	2.35 (59.7)	4.50 (114)	4.48 (114)			
BH□□-TS8-10	BH□□-TS8-10-3	1/2" TS	1/2" TS	0.38 (9.5)										
BH□□-TS8-10	BH□□-TS8-10-3	1/2" TS	1/2" TS	0.41 (10.4)		2.70 (68.6)	1.34 (34)				—			
BH□□-FNS6-13	BH□□-FNS6-13-3	3/8 Female NPT	3/8 Female NPT	0.52 (13.1)	12	2.70 (68.6)	1.35 (34.3)	0.89 (22.6)	2.35 (59.7)	4.50 (114)	4.19 (106)			
BH□□-FRT6-13	BH□□-FRT6-13-3	3/8 Female BSPT	3/8 Female BSPT											
BH□□-FRP6-13	BH□□-FRP6-13-3	3/8 Female BSPP	3/8 Female BSPP											
BH□□-FNS8-13	BH□□-FNS8-13-3	1/2 Female NPT	1/2 Female NPT											
BH□□-FRT8-13	BH□□-FRT8-13-3	1/2 Female BSPT	1/2 Female BSPT											
BH□□-FRP8-13	BH□□-FRP8-13-3	1/2 Female BSPP	1/2 Female BSPP											
BH□□-FL12-13	BH□□-FL12-13-3	3/4" FITOK	3/4" FITOK		13.6	4.04 (103)	2.02 (51.3)				4.84 (123)			
BH□□-ML16-13	BH□□-ML16-13-3	16 mm FITOK	16 mm FITOK											
BH□□-ML18-13	BH□□-ML18-13-3	18 mm FITOK	18 mm FITOK											
BH□□-TS12-13	BH□□-TS12-13-3	3/4" TS	3/4" TS		15	2.70 (68.6)	1.34 (34)				—			
BH□□-PS8-13	BH□□-PS8-13-3	1/2 PS	1/2 PS											
BH□□-PB8-13	BH□□-PB8-13-3	1/2 PB	1/2 PB									2.69 (68.3)	1.34 (34)	

Fittings and Connections											
Basic Ordering Number		Connection Type and Size		Orifice in.(mm)	Cv	Dimension, in. (mm)					
Straight	3-way	Connection 1	Connection 2/3			A	B	C	D	E	H
BH□□-PB12-13	BH□□-PB12-13-3	3/4 PB	3/4 PB	0.52 (13.1)	13.6	2.69 (68.3)	1.34 (34)	0.89 (22.6)	2.35 (59.7)	4.50 (114)	—
BH□□-FNS12-22	BH□□-FNS12-22-3	3/4 Female NPT	3/4 Female NPT	0.88 (22.2)	31	3.59 (91.2)	1.8 (45.7)	1.25 (31.8)	2.94 (74.7)	6.00 (152)	5.45 (138)
BH□□-FRT12-22	BH□□-FRT12-22-3	3/4 Female BSPT	3/4 Female BSPT								
BH□□-FRP12-22	BH□□-FRP12-22-3	3/4 Female BSPP	3/4 Female BSPP								
BH□□-FNS16-22	BH□□-FNS16-22-3	1 Female NPT	1 Female NPT								
BH□□-FRT16-22	BH□□-FRT16-22-3	1 Female BSPT	1 Female BSPT								
BH□□-FRP16-22	BH□□-FRP16-22-3	1 Female BSPP	1 Female BSPP								
BH□□-FL16-22	BH□□-FL16-22-3	1" FITOK	1" FITOK								
BH□□-FL20-22	BH□□-FL20-22-3	1 1/4" FITOK	1 1/4" FITOK								
BH□□-ML25-22	BH□□-ML25-22-3	25 mm FITOK	25 mm FITOK								
BH□□-ML28-22	BH□□-ML28-22-3	28 mm FITOK	28 mm FITOK								
BH□□-TS16-22	BH□□-TS16-22-3	1" TS	1" TS								
BH□□-MTS25-22	BH□□-MTS25-22-3	25 mm MTS	25 mm MTS								
BH□□-PS12-22	BH□□-PS12-22-3	3/4 PS	3/4 PS								
BH□□-PS16-22	BH□□-PS16-22-3	1 PS	1 PS								
BH□□-PB12-22	BH□□-PB12-22-3	3/4 PB	3/4 PB								
BH□□-PB16-22	BH□□-PB16-22-3	1 PB	1 PB								
BH□□-TS20-29	BH□□-TS20-29-3	1 1/4" TS	1 1/4" TS	1.13 (28.6)	80	4.39 (112)	2.19 (55.6)	1.53 (38.9)	4.03 (102)	9.14 (232)	—
BH□□-PB20-29	BH□□-PB20-29-3	1 1/4 PB	1 1/4 PB			4.57 (116)	2.28 (57.9)				
BH□□-FNS20-32	BH□□-FNS20-32-3	1 1/4 Female NPT	1 1/4 Female NPT	1.25 (31.8)	100	4.39 (112)	2.19 (55.6)	1.53 (38.9)	4.03 (102)	9.14 (232)	6.86 (174)
BH□□-FNS24-32	BH□□-FNS24-32-3	1 1/2 Female NPT	1 1/2 Female NPT								
BH□□-TS24-32	BH□□-TS24-32-3	1 1/2" TS	1 1/2" TS								
BH□□-PS20-32	BH□□-PS20-32-3	1 1/4 PS	1 1/4 PS								
BH□□-PS24-32	BH□□-PS24-32-3	1 1/2 PS	1 1/2 PS								
BH□□-PB24-32	BH□□-PB24-32-3	1 1/2 PB	1 1/2 PB								
BH□□-FNS32-38	BH□□-FNS32-38-3	2 Female NPT	2 Female NPT	1.50 (38.1)	130	4.94 (125)	2.47 (62.7)	1.74 (44.2)	4.16 (106)	9.14 (232)	7.21 (183)
BH□□-FRT32-38	BH□□-FRT32-38-3	2 Female BSPT	2 Female BSPT								
BH□□-TS32-38	BH□□-TS32-38-3	2" TS	2" TS								
BH□□-PS32-38	BH□□-PS32-38-3	2 PS	2 PS								
BH□□-PB32-38	BH□□-PB32-38-3	2 PB	2 PB								5.09 (129)

1. FITOK means FITOK double ferrule tube fittings, TS means fractional tube socket weld, MTS means metric tube socket weld, TB means fractional tube butt weld, MTB means metric tube butt weld, PS means pipe socket weld, PB means pipe butt weld.
2. Sizes and types listed are standard. Other sizes and types are available upon request, refer to the ordering information.
3. Dimensions are shown with FITOK nuts finger-tightened. All dimensions are for reference only and are subject to change. For dimensions not shown above, please contact the authorized representative or FITOK Group.

Part Number Description



Note: "Part Number Description" is used for composition rules of FITOK product model. Not suitable for specific product part number selection not random combinations. If in doubt, please contact FITOK company or authorized agents.

3. For information about pneumatic and electric actuator, please contact the authorized representative or FITOK Group.
4. For oxygen or virulent medium service, contact the authorized representative or FITOK Group.
5. Cleaning and packaging:
 - FC-01: Standard cleaning and packaging for general industrial procedures.
 - FC-02: Special cleaning and packaging for wetted system components to ensure compliance with product cleanliness requirements as stated in ASTM G93 Lever C.