



**BEYOND FLUID**

Beyond Fluid

## **Instrumentation Ball Valves**



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## Part NO. Description

For Example: SS-OPB-MN4-FN4-5-A

Material	Series	Inlet or Outlet	Size	Orifice	Type
SS: Stainles Steel 316	OPB Series	FN: Female Npt	2: 1/8"	2: 2.4mm	A: ANgle
S9: Stainles Steel 904L	HBB Series	MN: Male Npt	3: 3/16" or 3mm	3: 3.2mm	3W: 3-way
S4: Stainles Steel 304	HPB Series	FR: Female BSPT	4: 1/4"	4: 4.2mm	
S2: Stainles Steel 321	TB Series	MR: Male BSPT	5: 5/16"	5: 4.8mm	
M4: Monle 400	TBH Series	FT: Frantional Tube	6: 3/8" or 6mm	7: 7.1mm	
I6: Inconle 625		MT: Metric Tube	8: 1/2" Or 8mm	9: 8.9mm	
HC: Hastelly C 276		BW: Butt Weld	10: 5/8" or 10mm	9h: 9.5mm	
B: Brass		SW: Socket Weld	12: 3/4" or 12mm	10: 10.3mm	
			16: 1" or 16mm	16: 16mm	

# Hex Bar Stock Ball Valves

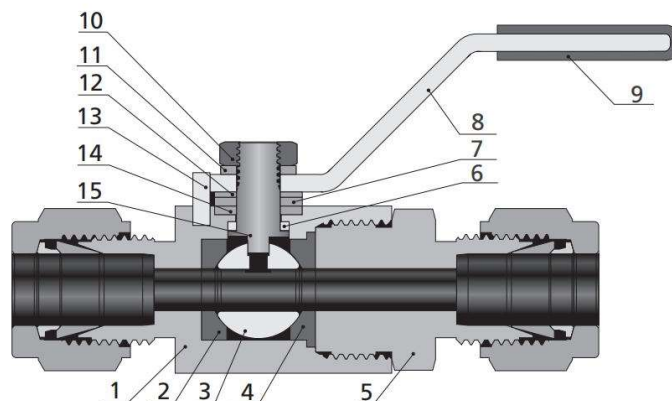
## HBB Series (1000 psig)

### Features

- ⦿ Compact and economical design.
- ⦿ Free floating ball design for seat wear compensation.
- ⦿ Bi-directional flow.
- ⦿ Low operating torque.
- ⦿ Any reasonable connections available.
- ⦿ Options for handle color.
- ⦿ Leak-tight performance testing for every valve at the maximum working pressure with nitrogen.
- ⦿ Maximum working pressure: 1000 psig (68.9 bar)
- ⦿ Working temperature: -20°F to 450°F (-28°C to 232°C)

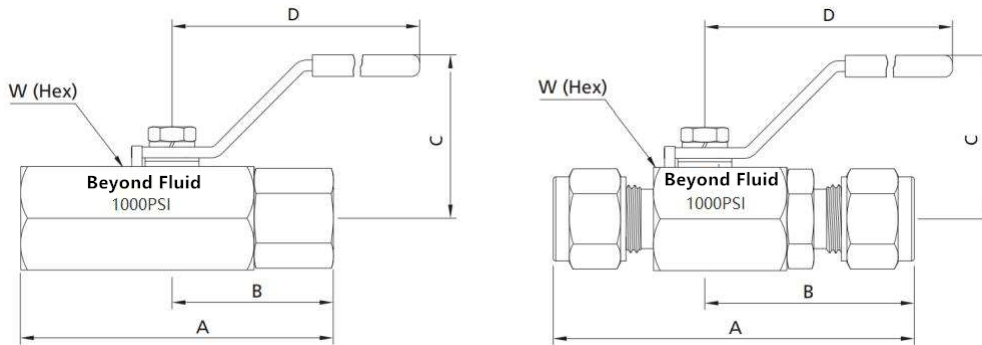


### Standard Materials of Construction



NO.	Component	Material		
		316 SS	304 SS	Brass
1	Body	316 SS/A276	304 SS/A276	Brass 36000/B16
2	Front Seat	PTFE/D1710		
3	Ball	316 SS/A276		
4	Back Seat	PTFE/D1710		
5	End Connector	316 SS/A276	304 SS/A276	Brass 36000/B16
6	Bottom Packing	PTFE/D1710		
7	Washer	316 SS/A276		
8	Handle	Nylon or Aluminium or 304 SS/A240		
9	Sleeve	Vinyl		
10	Stem Nut	Stainless steel		
11	Gasket	Stainless steel		
12	Coned-disk Spring	S17700/A693		
13	Pin	Stainless steel		
14	Top Packing	PTFE/D1710		
15	Stem	316 SS/A276		

## Dimensions

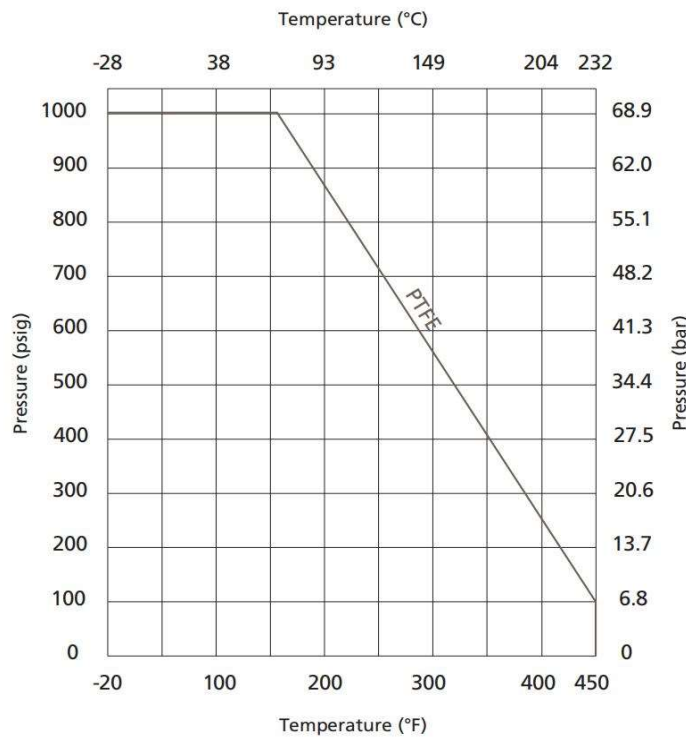


Basic Ordering Number	Connection Type and Size	Orifice in.(mm)	Cv	Dimension, in.(mm)				
				A	B	C	D	W
-HBB-FN2-5	1/8 Female NPT	0.19 (4.8)	1.25	1.85 (47.0)	1.08 (27.4)	2.36 (60.0)	1.18 (30.0)	0.75 (19.1)
-HBB-FN4-5	1/4 Female NPT	0.19 (4.8)	1.25	1.85 (47.0)	1.08 (27.4)	2.36 (60.0)	1.18 (30.0)	0.75 (19.1)
-HBB-FN6-7	3/8 Female NPT	0.28 (7.1)	2.50	2.03 (51.6)	1.18 (30.0)	2.36 (60.0)	1.18 (30.0)	0.87 (22.2)
-HBB-FN8-9	1/2 Female NPT	0.35 (8.9)	9.25	2.08 (53.0)	1.18 (30.0)	3.15 (80.0)	1.54 (39.0)	1.00 (25.4)
-HBB-FN12-12	3/4 Female NPT	0.47 (12.0)	12.65	2.39 (60.7)	1.20 (30.5)	3.94 (100.0)	2.03 (50.7)	1.26 (32.0)
-HBB-FN16-16	1 Female NPT	0.63 (16.0)	17.35	3.00 (76.5)	1.50 (38.1)	3.94 (100.0)	2.15 (54.8)	1.50 (38.1)
Basic Ordering Number	Connection Type and Size	Orifice in.(mm)	Cv	Dimension, in.(mm)				
				A	B	C	D	W
-HBB-MN4-5	1/4 Male NPT	0.19 (4.8)	1.25	1.85 (47.0)	1.08 (27.4)	2.36 (60.0)	1.18 (30.0)	0.75 (19.1)
-HBB-MN6-7	3/8 Male NPT	0.28 (7.1)	2.50	2.03 (51.6)	1.18 (30.0)	2.36 (60.0)	1.18 (30.0)	0.87 (22.2)
-HBB-MN8-9	1/2 Male NPT	0.35 (8.9)	9.25	2.08 (53.0)	1.18 (30.0)	3.15 (80.0)	1.54 (39.0)	0.87 (22.2)
-HBB-MN12-12	3/4 Male NPT	0.47 (12.0)	12.65	2.39 (60.7)	1.20 (30.5)	3.94 (100.0)	2.03 (50.7)	1.26 (32.0)
-HBB-MN16-16	1 Male NPT	0.63 (16.0)	17.35	3.00 (76.5)	1.50 (38.1)	3.94 (100.0)	2.15 (54.8)	1.50 (38.1)
Basic Ordering Number	Connection Type and Size	Orifice in.(mm)	Cv	Dimension, in.(mm)				
				A	B	C	D	W
-HBB-FT4-5	1/4 Tube	0.19 (4.8)	1.25	2.57 (65.2)	1.50 (38.1)	2.36 (60.0)	1.18 (30.0)	0.75 (19.1)
-HBB-FT6-7	3/8 Tube	0.28 (7.1)	2.50	2.87 (72.9)	1.68 (42.7)	2.36 (60.0)	1.18 (30.0)	0.87 (22.2)
-HBB-FT8-9	1/2 Tube	0.35 (8.9)	9.25	3.15 (80.0)	1.83 (46.5)	3.15 (80.0)	1.54 (39.0)	1.00 (25.4)
-HBB-FT12-12	3/4 Tube	0.47 (12.0)	12.65	3.50 (88.9)	2.00 (50.8)	3.94 (100.0)	2.03 (50.7)	1.26 (32.0)
-HBB-FT16-16	1 Tube	0.63 (16.0)	17.35	4.31 (109.5)	2.42 (61.5)	3.94 (100.0)	2.15 (54.8)	1.50 (38.1)

Basic Ordering Number	Connection Type and Size	Orifice in.(mm)	Cv	Dimension, in.(mm)				
				A	B	C	D	W
-HBB-MT6-5	6mm Tube	0.19 (4.8)	1.25	2.57 (65.2)	1.50 (38.1)	2.36 (60.0)	1.18 (30.0)	0.75 (19.1)
-HBB-MT8-5	8mm Tube	0.19 (4.8)	1.25	2.63 (66.8)	1.53 (38.8)	2.36 (60.0)	1.18 (30.0)	0.75 (19.1)
-HBB-MT10-7	10mm Tube	0.28 (7.1)	2.50	2.87 (72.9)	1.68 (42.7)	2.36 (60.0)	1.18 (30.0)	0.87 (22.2)
-HBB-MT12-9	12mm Tube	0.35 (8.9)	9.25	3.15 (80.0)	1.83 (46.5)	3.15 (80.0)	1.54 (39.0)	1.00 (25.4)
-HBB-MT14-9	14mm Tube	0.35 (8.9)	9.25	3.24 (82.2)	1.87 (47.5)	3.15 (80.0)	1.54 (39.0)	1.00 (25.4)
-HBB-MT16-12	16mm Tube	0.47 (12.0)	12.65	3.50 (88.9)	2.00 (50.8)	3.94 (100.0)	2.03 (50.7)	1.26 (32.0)
-HBB-MT18-12	18mm Tube	0.47 (12.0)	12.65	3.50 (88.9)	2.00 (50.8)	3.94 (100.0)	2.03 (50.7)	1.26 (32.0)
-HBB-MT22-16	22mm Tube	0.63 (16.0)	17.35	3.96 (100.6)	2.24 (57.1)	3.94 (100.0)	2.15 (54.8)	1.50 (38.1)
-HBB-MT25-16	25mm Tube	0.63 (16.0)	17.35	4.31 (109.5)	2.42 (61.5)	3.94 (100.0)	2.15 (54.8)	1.50 (38.1)

1. Sizes and types listed are standard. Other sizes and types are available upon request, refer to the ordering information.
2. Dimensions are shown with Beyond Fluid nuts finger-tightened. All dimensions are for reference only and are subject to change.
3. For dimensions not shown above, please contact the authorized representative or Beyond Fluid employees.

## Pressure vs. Temperature



# One-piece Instrumentation Ball Valves

## OPB & OPD Series (3000 psig)

### Features

- One-piece body and one-piece ball stem.
- No dead zone, such as area between the ball and valve chamber.
- Full operating pressure at any port.
- Leak-tight performance testing for every valve at the maximum working pressure with nitrogen.
- In-line inspection and repair after system relieved by top entry design.
- Maximum working pressure: 3000 psig (207 bar).
- Working temperature:

OPB Series: -20°F至 300°F (-28°C至 148°C)

OPD Series: -65°F至 300°F (-54°C至 148°C)



### Standard Materials of Construction

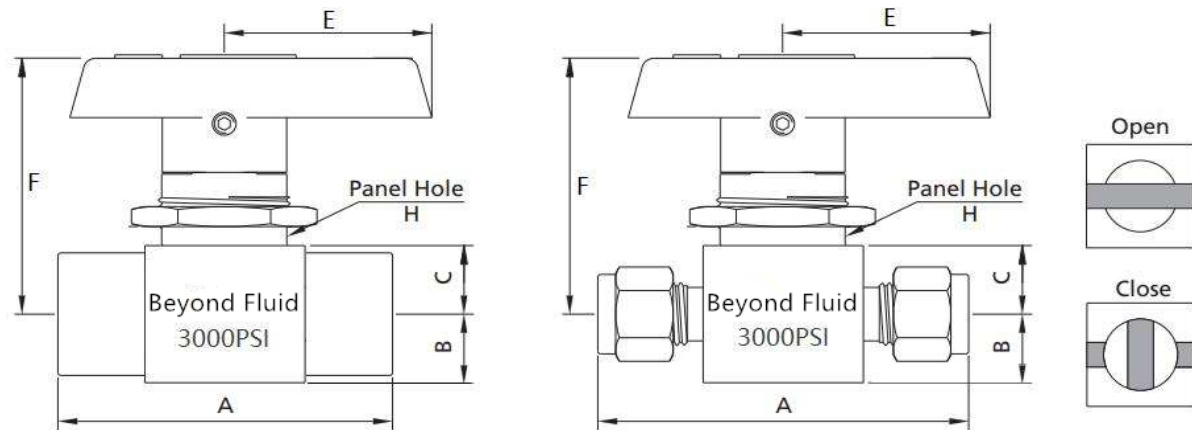
#### OPB 系列

NO.	Component	Material		
		316 SS	Brass	Alloy 400
1	Handle	Nylon or Aluminium		
2	Set Screw	S17400 SS/A564		
3	Packing Bolt	316 SS/A276	Brass 36000	Alloy 400/B164
4	Panel Nut	316 SS/A276	Brass 36000	316 SS/A276
5	Packing	PTFE		
6	Gland	316 SS/A276	Brass 36000	Alloy 400/B164
7	Packing Set	PTFE/D1710 or UHMWPE/D4020		
8	Support Ring	316 SS/A276	Brass 36000	Alloy 400/B164
9	Ball Stem	316 SS/A276	Brass 36000	Alloy 400/B164
10	Body	316 SS/A276	Brass 36000	Alloy 400/B164

#### OPD 系列

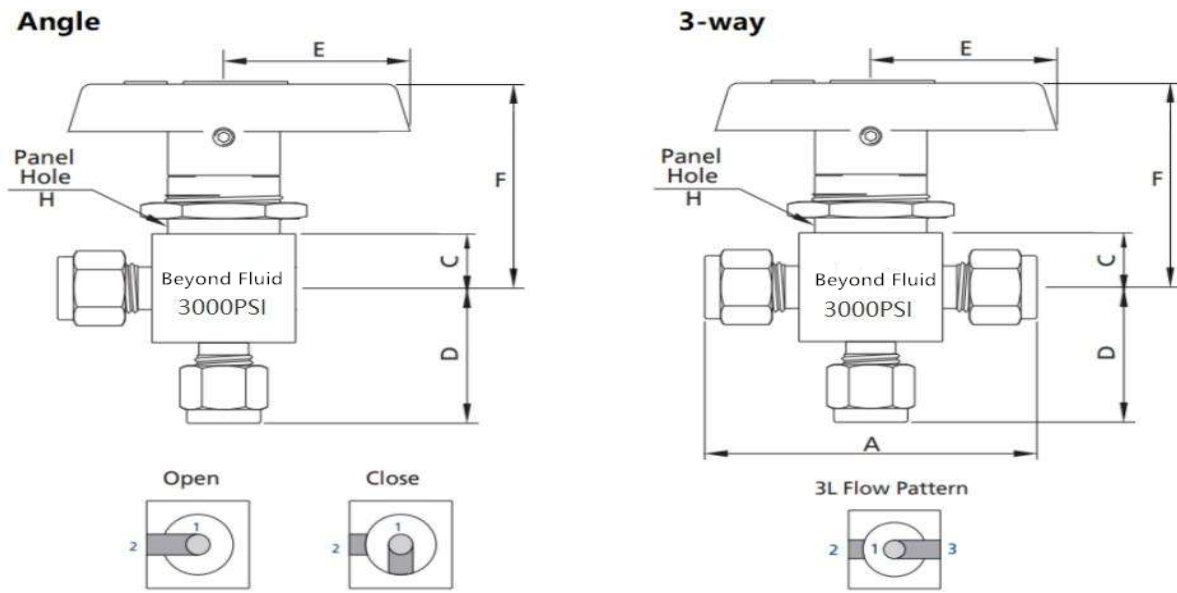
NO.	Component	Material		
		316 SS	Brass	Alloy 400
1	Handle	Nylon or Aluminium		
2	Set Screw	S17400 SS/A564		
3	Packing Bolt	316 SS/A276	Brass 36000	Alloy 400/B164
4	Panel Nut	316 SS/A276	Brass 36000	316 SS/A276
5	Dishing Spring	S17700 SS/A693		
6	Gland	316 SS/A276	Brass 36000	Alloy 400/B164
7	Packing Set	PTFE/D1710 or UHMWPE/D4020		
8	Support Ring	316 SS/A276	Brass 36000	Alloy 400/B164
9	Ball Stem	316 SS/A276	Brass 36000	Alloy 400/B164
10	Body	316 SS/A276	Brass 36000	Alloy 400/B164

## Dimensions OPB Series Straight



Basic Ordering Number	Connection Type and Size	Orifice in.(mm)	Cv	Dimension, in.(mm)					
				A	B	C	E	F	H
-OPB-FN2-3	1/8 Female NPT	0.13 (3.2)	0.50	1.63 (41.4)	0.28 (7.1)	0.34 (8.6)	1.10 (28.0)	1.43 (36.2)	0.59 (15.0)
-OPB-FN2-5		0.19 (4.8)		2.00 (50.8)	0.38 (9.7)	0.44 (11.2)	1.57 (39.9)	1.64 (41.7)	0.78 (19.8)
-OPB-FN4-5	1/4 Female NPT	0.19 (4.8)	0.90	2.06 (52.3)	0.38 (9.7)	0.44 (11.2)	1.57 (39.9)	1.64 (41.7)	0.78 (19.8)
-OPB-FN4-5		0.28 (7.1)		2.50 (63.5)	0.56 (14.2)	0.56 (14.2)	2.05 (52)	2.19 (55.5)	1.13 (28.6)
-OPB-FN6-7	3/8 Female NPT	0.28 (7.1)	2.60	2.50 (63.5)	0.56 (14.2)	0.56 (14.2)	2.05 (52)	2.19 (55.5)	1.13 (28.6)
-OPB-FN8-7	1/2 Female NPT	0.28 (7.1)	2.60	2.88 (73.2)	0.56 (14.2)	0.56 (14.2)	2.05 (52)	2.19 (55.5)	1.13 (28.6)
-OPB-FN8-10		0.41 (10.3)		6.30	3.12 (79.2)	0.69 (17.5)	0.69 (17.5)	3.13 (79.6)	2.67 (67.7)
-OPB-FN12-10	3/4 Female NPT	0.41 (10.3)	6.30	3.12 (79.2)	0.69 (17.5)	0.69 (17.5)	3.13 (79.6)	2.67 (67.7)	1.50 (38.1)
-OPB-MN2-3	1/8 Male NPT	0.13 (3.2)	0.60	1.63 (41.4)	0.28 (7.1)	0.34 (8.6)	1.10 (28.0)	1.43 (36.2)	0.59 (15.0)
-OPB-MN4-3	1/4 Male NPT	0.13 (3.2)	0.60	1.75 (44.4)	0.28 (7.1)	0.34 (8.6)	1.10 (28.0)	1.43 (36.2)	0.59 (15.0)
-OPB-MN4-5		0.19 (4.8)		2.00 (50.8)	0.38 (9.7)	0.44 (11.2)	1.57 (39.9)	1.64 (41.7)	0.78 (19.8)
-OPB-MN6-7	3/8 Male NPT	0.28 (7.1)	2.60	2.50 (63.5)	0.56 (14.2)	0.56 (14.2)	2.05 (52)	2.19 (55.5)	1.13 (28.6)
-OPB-MN8-7	1/2 Male NPT	0.28 (7.1)	2.60	2.88 (73.2)	0.56 (14.2)	0.56 (14.2)	2.05 (52)	2.19 (55.5)	1.13 (28.6)
-OPB-MN12-10	3/4 Male NPT	0.41 (10.3)	6.30	3.12 (79.2)	0.69 (17.5)	0.69 (17.5)	3.13 (79.6)	2.67 (67.7)	1.50 (38.1)
-OPB-FT2-2	1/8" Tube	0.09 (2.4)	0.20	2.01 (51.0)	0.28 (7.1)	0.34 (8.6)	1.10 (28.0)	1.43 (36.2)	0.59 (15.0)
-OPB-FT4-3	1/4" Tube	0.13 (3.2)	0.60	2.21 (56.1)	0.28 (7.1)	0.34 (8.6)	1.10 (28.0)	1.43 (36.2)	0.59 (15.0)
-OPB-FT4-5		0.19 (4.8)		2.39 (60.7)	0.38 (9.7)	0.44 (11.2)	1.57 (39.9)	1.64 (41.7)	0.78 (19.8)
-OPB-FT6-5	3/8" Tube	0.19 (4.8)	1.50	2.58 (65.5)	0.38 (9.7)	0.44 (11.2)	1.57 (39.9)	1.64 (41.7)	0.78 (19.8)
-OPB-FT6-7		0.28 (7.1)		2.60	3.05 (77.5)	0.56 (14.2)	0.56 (14.2)	2.05 (52)	2.19 (55.5)
-OPB-FT8-7	1/2" Tube	0.28 (7.1)	2.60	3.28 (83.3)	0.56 (14.2)	0.56 (14.2)	2.05 (52)	2.19 (55.5)	1.13 (28.6)
-OPB-FT8-10		0.41 (10.3)		6.30	3.92 (99.6)	0.69 (17.5)	0.69 (17.5)	3.00 (76.2)	2.43 (61.7)
-OPB-FT12-10	3/4" Tube	0.41 (10.3)	6.30	3.92 (99.6)	0.69 (17.5)	0.69 (17.5)	3.00 (76.2)	2.43 (61.7)	1.50 (38.1)
-OPB-MT3-2	3mm Tube	0.09 (2.4)	0.20	2.01 (51.0)	0.28 (7.1)	0.34 (8.6)	1.10 (28.0)	1.43 (36.2)	0.59 (15.0)
-OPB-MT6-5	6mm Tube	0.19 (4.8)	1.40	2.39 (60.7)	0.38 (9.7)	0.44 (11.2)	1.57 (39.9)	1.64 (41.7)	0.78 (19.8)
-OPB-MT8-5	8mm Tube	0.19 (4.8)	1.40	2.46 (62.5)	0.38 (9.7)	0.44 (11.2)	1.57 (39.9)	1.64 (41.7)	0.78 (19.8)
-OPB-MT10-7	10mm Tube	0.28 (7.1)	2.60	3.05 (77.5)	0.56 (14.2)	0.56 (14.2)	2.05 (52)	2.19 (55.5)	1.13 (28.6)
-OPB-MT12-7	12mm Tube	0.28 (7.1)	2.60	3.28 (83.3)	0.56 (14.2)	0.56 (14.2)	2.05 (52)	2.19 (55.5)	1.13 (28.6)
-OPB-MT12-10		0.41 (10.3)		6.30	3.92 (99.6)	0.69 (17.5)	0.69 (17.5)	3.00 (76.2)	2.43 (61.7)

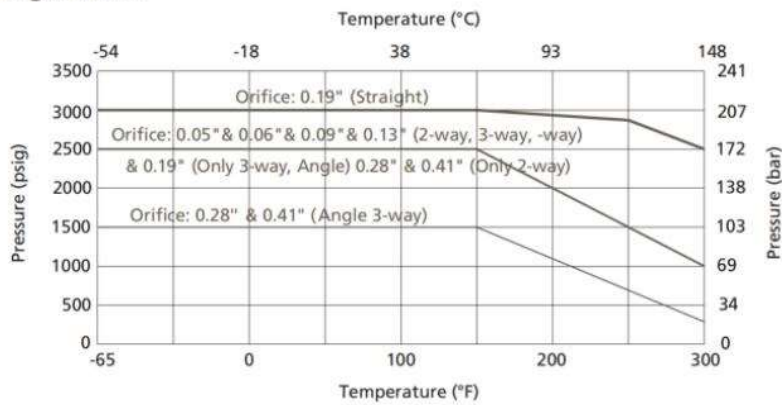
## Dimensions OPB Series



Basic Ordering Number	Connection Type and Size	Orifice in.(mm)	Cv	Dimension, in.(mm)					
				A	C	D	E	F	H
-OPB-FN2-3-A	1/8 Female NPT	0.13 (3.2)	0.35	1.63	0.34	0.81	1.10	1.43	0.59
-OPB-FN2-3-3W				(41.4)	(8.6)	(20.6)	(28.0)	(36.2)	(15.0)
-OPB-FN4-5-A	1/4 Female NPT	0.19 (4.8)	0.90	2.06	0.44	1.03	1.57	1.64	0.78
-OPB-FN4-5-3W				(52.3)	(11.2)	(26.2)	(39.9)	(41.7)	(19.8)
-OPB-FN6-7-A	3/8 Female NPT	0.28 (7.1)	2.00	2.50	0.56	1.25	2.05	2.19	1.13
-OPB-FN6-7-3W				(63.5)	(14.2)	(31.8)	(52)	(55.5)	(28.6)
-OPB-FN8-7-A	1/2 Female NPT	0.28 (7.1)	2.00	2.88	0.56	1.96	2.05	2.19	1.13
-OPB-FN8-7-3W				(73.2)	(14.2)	(39.6)	(52)	(55.5)	(28.6)
-OPB-MN2-3-A	1/8 Male NPT	0.13 (3.2)	0.35	1.63	0.34	0.81	1.10	1.43	0.59
-OPB-MN2-3-3W				(41.4)	(8.6)	(20.6)	(28.0)	(36.2)	(15.0)
-OPB-MN4-5-A	1/4 Male NPT	0.19 (4.8)	0.90	2.06	0.44	1.00	1.57	1.64	0.78
-OPB-MN4-5-3W				(52.3)	(11.2)	(25.4)	(39.9)	(41.7)	(19.8)
-OPB-MN6-7-A	3/8 Male NPT	0.28 (7.1)	2.00	2.50	0.56	1.25	2.05	2.19	1.13
-OPB-MN6-7-3W				(63.5)	(14.2)	(31.8)	(52)	(55.5)	(28.6)
-OPB-MN8-7-A	1/2 Male NPT	0.28 (7.1)	2.00	2.88	0.56	1.56	2.05	2.19	1.13
-OPB-MN8-7-3W				(73.2)	(14.2)	(39.6)	(52)	(55.5)	(28.6)
-OPB-FT2-2-A	1/8" Tube	0.09 (2.4)	0.15	2.01	0.34	0.97	1.10	1.43	0.59
-OPB-FT2-2-3W				(51.0)	(8.6)	(24.6)	(28.0)	(36.2)	(15.0)
-OPB-FT4-5-A	1/4" Tube	0.19 (4.8)	0.90	2.39	0.44	1.17	1.57	1.64	0.78
-OPB-FT4-5-3W				(60.7)	(11.2)	(29.7)	(39.9)	(41.7)	(19.8)
-OPB-FT6-7-A	3/8" Tube	0.28 (7.1)	2.00	3.05	0.56	1.43	2.05	2.19	1.13
-OPB-FT6-7-3W				(77.5)	(14.2)	(36.3)	(52)	(55.5)	(28.6)
-OPB-FT8-7-A	1/2" Tube	0.28 (7.1)	2.00	3.28	0.56	1.43	2.05	2.19	1.13
-OPB-FT8-7-3W				(83.3)	(14.2)	(36.3)	(52)	(55.5)	(28.6)
-OPB-MT3-2-A	3mm Tube	0.09 (2.4)	0.15	2.01	0.34	0.97	1.10	1.43	0.59
-OPB-MT3-2-3W				(51.0)	(8.6)	(24.6)	(28.0)	(36.2)	(15.0)
-OPB-MT6-5-A	6mm Tube	0.19 (4.8)	0.90	2.39	0.44	1.29	1.57	1.64	0.78
-OPB-MT6-5-3W				(60.7)	(11.2)	(32.8)	(39.9)	(41.7)	(19.8)
-OPB-MT8-5-A	8mm Tube	0.19 (4.8)	0.90	2.46	0.44	1.29	1.64	1.64	0.78
-OPB-MT8-5-3W				(62.5)	(11.2)	(32.8)	(41.7)	(41.7)	(19.8)
-OPB-MT10-7-A	10mm Tube	0.28 (7.1)	2.00	3.05	0.56	1.43	2.05	2.19	1.13
-OPB-MT10-7-3W				(77.5)	(14.2)	(36.3)	(52)	(55.5)	(28.6)
-OPB-MT12-7-A	12mm Tube	0.28 (7.1)	2.00	3.28	0.56	1.43	2.05	2.19	1.13
-OPB-MT12-7-3W				(83.3)	(14.2)	(36.3)	(52)	(55.5)	(28.6)

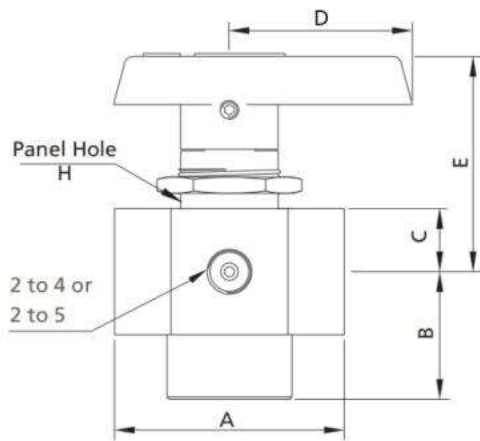
# Pressure vs. Temperature

2-, 3-way, Angle Valves

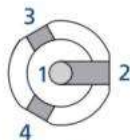


# Switching Valves (4, 5, 6 and 7-way)

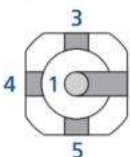
4, 5-way Valve



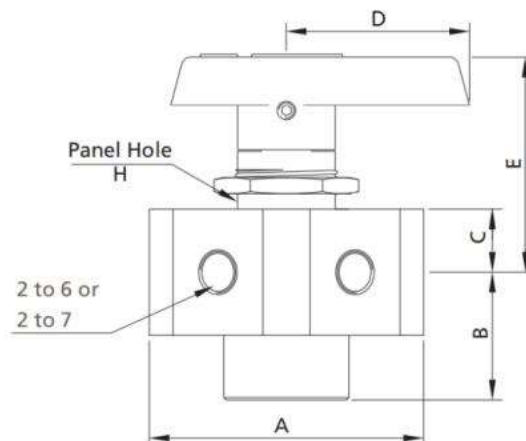
4L Flow Pattern



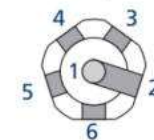
5L Flow Pattern



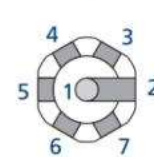
6, 7-way Valve



6L Flow Pattern



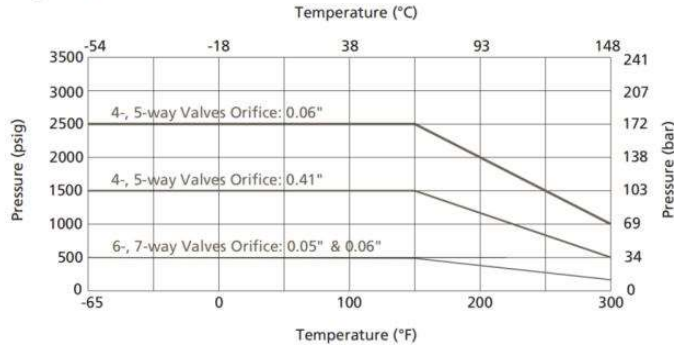
7L Flow Pattern



Basic Ordering Number	Connection Type and Size	Orifice in.(mm)	Cv	Dimension, in.(mm)					
				A	B	C	D	E	H
-OPB-FN2-2-4L	1/8 Female NPT	0.06 (1.6)	0.07	1.85	0.88	0.44	1.57	1.76	0.91
-OPB-FN2-2-5L				(47.0)	(22.4)	(11.2)	(39.9)	(44.6)	(23.1)
-OPB-FN8-10-4L	1/2 Female NPT	0.41 (10.3)	3.50	3.13	1.56	0.69	3.13	2.63	1.50
-OPB-FN8-10-5L				(79.5)	(39.6)	(17.5)	(79.6)	(66.7)	(38.1)
-OPB-FT2-2-4L	1/8 Tube	0.06 (1.6)	0.07	2.64	1.32	0.44	1.57	1.76	0.91
-OPB-FT2-2-5L				(67.0)	(33.5)	(11.2)	(39.9)	(44.6)	(23.1)
-OPB-FT2-1-6L	1/16 Tube	0.05 (1.3)	0.05	2.64	1.32	0.44	1.57	1.76	0.91
-OPB-FT2-1-7L				(67.0)	(33.5)	(11.2)	(39.9)	(44.6)	(23.1)
-OPB-FT2-2-6L	1/8 Tube	0.06 (1.6)	0.07	2.64	1.32	0.44	1.57	1.76	0.91
-OPB-FT2-2-7L				(67.0)	(33.5)	(11.2)	(39.9)	(44.6)	(23.1)

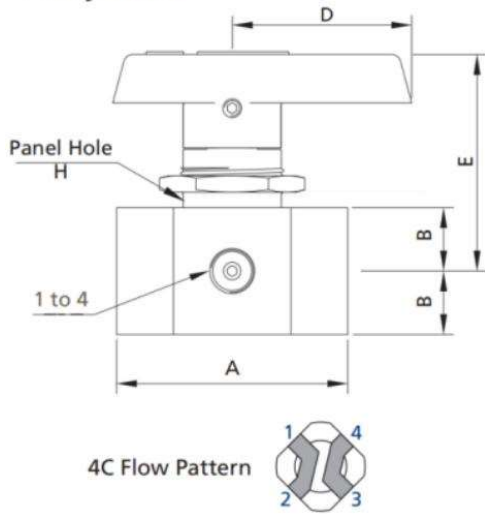
# Pressure vs. Temperature

4-, 5-, 6-, 7-way Valves

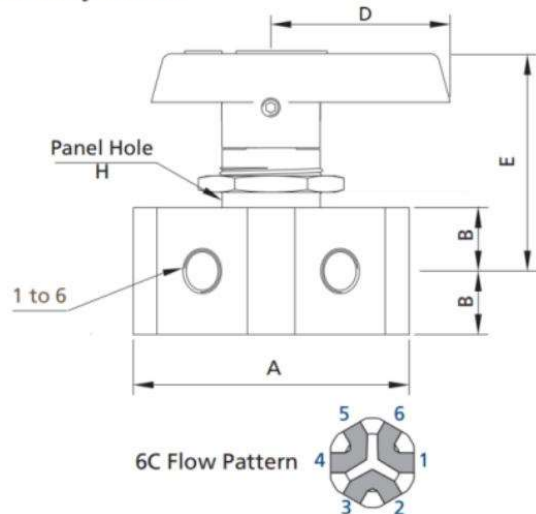


## Crossover Valves (4, 6-way)

4-way Valve



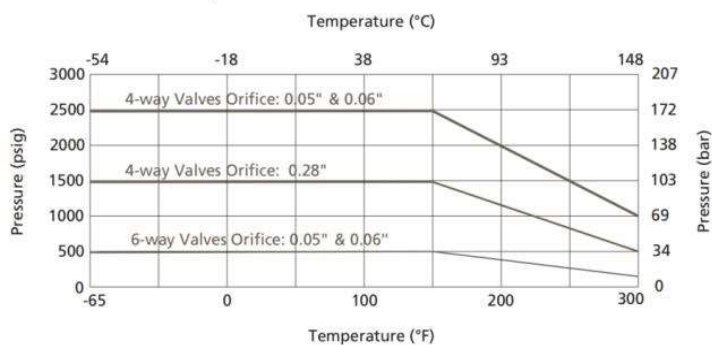
6-way Valve



Basic Ordering Number	Connection Type and Size	Orifice in.(mm)	Cv	Dimension, in.(mm)				
				A	B	D	E	H
-OPB-FN2-2-4C	1/8 Female NPT	0.06 (1.6)	0.08	1.55 (39.4)	0.44 (11.2)	1.57 (39.9)	1.64 (41.7)	0.78 (19.8)
-OPB-FN8-7-4C	1/2 Female NPT	0.28 (7.1)	1.60	3.13 (79.5)	0.69 (17.5)	3.13 (79.6)	2.67 (67.7)	1.50 (38.1)
-OPB-FT1-1-4C	1/16 Tube	0.05 (1.3)	0.06	1.95 (49.6)	0.44 (11.2)	1.57 (39.9)	1.64 (41.7)	0.78 (19.8)
-OPB-FT2-2-4C	1/8 Tube	0.06 (1.6)	0.08	2.61 (66.3)	0.44 (11.2)	1.57 (39.9)	1.64 (41.7)	0.78 (19.8)
-OPB-FT1-1-6C	1/16 Tube	0.05 (1.3)	0.06	1.95 (49.6)	0.44 (11.2)	1.57 (39.9)	1.64 (41.7)	0.78 (19.8)
-OPB-FT2-2-6C	1/8 Tube	0.06 (1.6)	0.08	1.95 (49.6)	0.44 (11.2)	1.57 (39.9)	1.64 (41.7)	0.78 (19.8)

# Pressure vs. Temperature

Crossover (4-, 6-way) Valves



# High Performance Ball Valves

## HPB Series (6000 psig)

### Features

- Bi-directional flow for straight valves.
- Low operating torque.
- Positive handle stop.
- Handle as flow direction indicator.
- Options for handle color.
- The inlet of 3-way valves and angle pattern valves should be only from the bottom.
- Leak-tight performance testing for every valve at the maximum working pressure with nitrogen.
- Maximum working pressure: 6000 psig (414 bar).
- Working temperature: -65°F to 450°F (-54°C to 232°C).



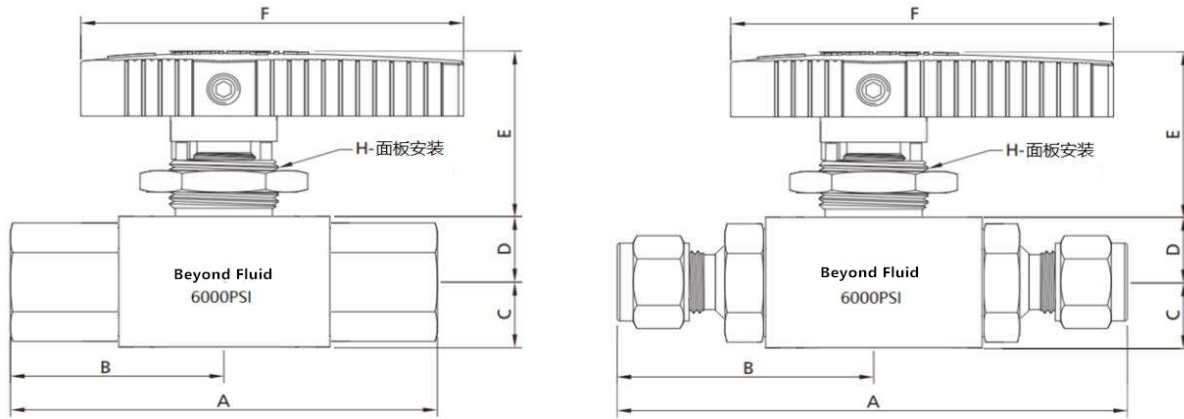
### Straight Valves:

Construction	NO.	Component	Material	
			316 SS	Brass
	1	Handle	Nylon or Aluminium	
	2	Packing Nut	316 SS/A276	C36000/B16
	3	Panel Nut	316 SS/A276	C36000/B16
	4	Body	316 SS/A276	C36000/B16
	5	End Connector	316 SS/A276	C36000/B16
	6	Packing	PTFE	
	7	Ball	316 SS/A479	
	8	Seat	PTFE or PCTFE or PEEK	
	9	Stem Washer	316 SS/A276	
	10	Stem Packing	PTFE	
	11	Stem	316 SS/A276	
	12	Seat Screw	S17400 SS/A564	

### 3-way Valves:

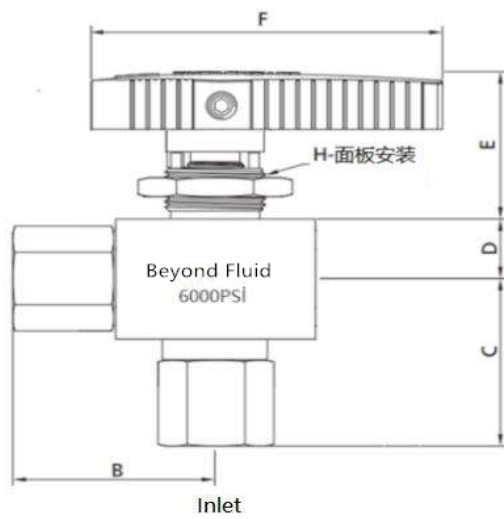
Construction	NO.	Component	Material	
			316 SS	Brass
	1	Handle	Nylon or Aluminium	
	2	Packing Nut	316 SS/A276	C36000/B16
	3	Panel Nut	316 SS/A276	C36000/B16
	4	Body	316 SS/A276	C36000/B16
	5	End Connector	316 SS/A276	C36000/B16
	6	Packing	PTFE	
	7	Ball	316 SS/A479	
	8	Seat	PTFE or PCTFE or PEEK	
	9	Stem Washer	316 SS/A276	
	10	Stem Packing	PTFE	
	11	Stem	316 SS/A276	
	12	Seat Screw	S17400 SS/A564	

## Dimensions Straight

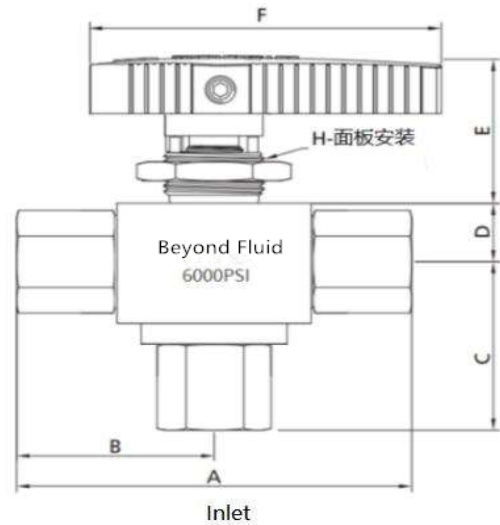


Basic Ordering Number	Connection Type and Size	Orifice in.(mm)	Cv	Dimension, in.(mm)						
				A	B	C	D	E	F	H
-HPB-FN2-5	1/8 Female NPT	0.19 (4.8)	1.2	2.47 (62.8)	1.24 (31.4)	0.44 (11.1)	0.44 (11.1)	1.10 (28.0)	2.56 (65.0)	0.77 (19.5)
-HPB-FN4-5	1/4 Female NPT	0.19 (4.8)	1.2	2.83 (72.0)	1.42 (36.0)	0.44 (11.1)	0.44 (11.1)	1.10 (28.0)	2.56 (65.0)	0.77 (19.5)
-HPB-FN4-7	1/4 Female NPT	0.28 (7.1)	4.0	3.07 (78.0)	1.54 (39.0)	0.54 (13.8)	0.54 (13.8)	1.32 (33.5)	2.56 (65.0)	0.90 (22.8)
-HPB-FN6-7	3/8 Female NPT	0.28 (7.1)	4.0	3.23 (82.0)	1.61 (41.0)	0.54 (13.8)	0.54 (13.8)	1.32 (33.5)	2.56 (65.0)	0.90 (22.8)
-HPB-FN6-10	3/8 Female NPT	0.41 (10.3)	6.4	3.54 (90.4)	1.77 (45.2)	0.63 (16.0)	0.63 (16.0)	1.45 (37.0)	3.27 (83.0)	0.90 (22.8)
-HPB-FN8-10	1/2 Female NPT	0.41 (10.3)	6.4	3.80 (96.6)	1.90 (48.3)	0.63 (16.0)	0.63 (16.0)	1.45 (37.0)	3.27 (83.0)	0.90 (22.8)
-HPB-FN12-10	3/4 Female NPT	0.41 (10.3)	6.4	3.87 (98.2)	1.93 (49.1)	0.63 (16.0)	0.63 (16.0)	1.45 (37.0)	3.27 (83.0)	0.90 (22.8)
-HPB-MN2-5	1/8 Male NPT	0.19 (4.8)	1.2	2.57 (65.4)	1.29 (32.7)	0.44 (11.1)	0.44 (11.1)	1.10 (28.0)	2.56 (65.0)	0.77 (19.5)
-HPB-MN4-5	1/4 Male NPT	0.19 (4.8)	1.2	2.94 (74.7)	1.47 (37.4)	0.44 (11.1)	0.44 (11.1)	1.10 (28.0)	2.56 (65.0)	0.77 (19.5)
-HPB-MN6-5	3/8 Male NPT	0.19 (4.8)	1.2	2.94 (74.7)	1.47 (37.4)	0.44 (11.1)	0.44 (11.1)	1.10 (28.0)	2.56 (65.0)	0.77 (19.5)
-HPB-MN6-7	3/8 Male NPT	0.28 (7.1)	4.0	3.32 (84.4)	1.66 (42.2)	0.54 (13.8)	0.54 (13.8)	1.32 (33.5)	2.56 (65.0)	0.90 (22.8)
-HPB-MN8-10	1/2 Male NPT	0.41 (10.3)	6.4	4.02 (102.2)	2.01 (51.1)	0.63 (16.0)	0.63 (16.0)	1.45 (37.0)	3.27 (83.0)	0.90 (22.8)
-HPB-MN12-10	3/4 Male NPT	0.41 (10.3)	6.4	4.02 (102.2)	2.01 (51.1)	0.63 (16.0)	0.63 (16.0)	1.45 (37.0)	3.27 (83.0)	0.90 (22.8)
-HPB-FT2-2	1/8 Tube	0.09 (2.4)	0.3	3.02 (76.6)	1.51 (38.3)	0.44 (11.1)	0.44 (11.1)	1.10 (28.0)	2.56 (65.0)	0.77 (19.5)
-HPB-FT4-5	1/4 Tube	0.19 (4.8)	1.2	3.20 (81.4)	1.60 (40.7)	0.44 (11.1)	0.44 (11.1)	1.10 (28.0)	2.56 (65.0)	0.77 (19.5)
-HPB-FT6-5	3/8 Tube	0.19 (4.8)	1.2	3.34 (84.8)	1.67 (42.4)	0.44 (11.1)	0.44 (11.1)	1.10 (28.0)	2.56 (65.0)	0.77 (19.5)
-HPB-FT6-7	3/8 Tube	0.28 (7.1)	4.0	3.72 (94.6)	1.86 (47.3)	0.54 (13.8)	0.54 (13.8)	1.32 (33.5)	2.56 (65.0)	0.90 (22.8)
-HPB-FT8-7	1/2 Tube	0.28 (7.1)	4.0	3.95 (100.2)	1.97 (50.1)	0.54 (13.8)	0.54 (13.8)	1.32 (33.5)	2.56 (65.0)	0.90 (22.8)
-HPB-FT8-10	1/2 Tube	0.41 (10.3)	6.4	4.26 (108.3)	2.13 (54.2)	0.63 (16.0)	0.63 (16.0)	1.45 (37.0)	3.27 (83.0)	0.90 (22.8)
-HPB-FT12-10	3/4 Tube	0.41 (10.3)	6.4	4.26 (108.3)	2.13 (54.2)	0.63 (16.0)	0.63 (16.0)	1.45 (37.0)	3.27 (83.0)	0.90 (22.8)
-HPB-MT6-5	6mm Tube	0.19 (4.8)	1.2	3.20 (81.3)	1.60 (40.7)	0.44 (11.1)	0.44 (11.1)	1.10 (28.0)	2.56 (65.0)	0.77 (19.5)
-HPB-MT8-5	8mm Tube	0.19 (4.8)	1.2	3.28 (83.3)	1.64 (41.7)	0.44 (11.1)	0.44 (11.1)	1.10 (28.0)	2.56 (65.0)	0.77 (19.5)
-HPB-MT10-5	10mm Tube	0.19 (4.8)	1.2	3.35 (85.2)	1.68 (42.6)	0.44 (11.1)	0.44 (11.1)	1.10 (28.0)	2.56 (65.0)	0.77 (19.5)
-HPB-MT10-7	10mm Tube	0.28 (7.1)	4.0	3.75 (95.2)	1.88 (47.6)	0.54 (13.8)	0.54 (13.8)	1.32 (33.5)	2.56 (65.0)	0.90 (22.8)
-HPB-MT12-7	12mm Tube	0.28 (7.1)	4.0	3.95 (100.2)	1.97 (50.1)	0.54 (13.8)	0.54 (13.8)	1.32 (33.5)	2.56 (65.0)	0.90 (22.8)
-HPB-MT12-10	12mm Tube	0.41 (10.3)	6.4	4.26 (108.2)	2.13 (54.2)	0.63 (16.0)	0.63 (16.0)	1.45 (37.0)	3.27 (83.0)	0.90 (22.8)
-HPB-MT14-10	14mm Tube	0.41 (10.3)	6.4	4.26 (108.2)	2.13 (54.2)	0.63 (16.0)	0.63 (16.0)	1.45 (37.0)	3.27 (83.0)	0.90 (22.8)
-HPB-MT18-10	18mm Tube	0.41 (10.3)	6.4	4.26 (108.2)	2.13 (54.2)	0.63 (16.0)	0.63 (16.0)	1.45 (37.0)	3.27 (83.0)	0.90 (22.8)

## Dimensions Angle



## Dimensions 3-way

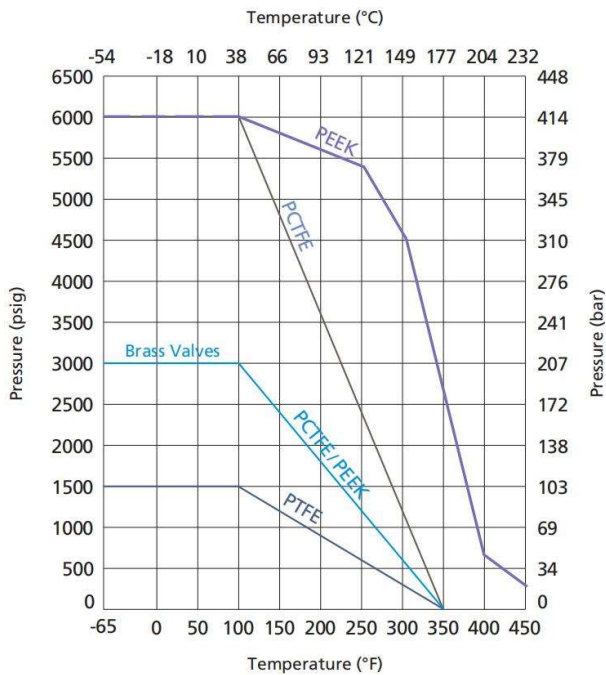


Basic Ordering Number	Connection Type and Size	Orifice in.(mm)	Cv	Dimension, in.(mm)						
				A	B	C	D	E	F	H
-HPB-FN2-5-A	1/8 Female NPT	0.19	1.2	2.47	1.24	1.24	0.44	1.10	2.56	0.77
-HPB-FN2-5-3W		(4.8)		(62.8)	(31.4)	(31.4)	(11.1)	(28.0)	(65.0)	(19.5)
-HPB-FN4-5-A		0.19		2.83	1.42	1.42	0.44	1.10	2.56	0.77
-HPB-FN4-5-3W	1/4 Female NPT	(4.8)	1.2	(72)	(36.0)	(36.0)	(11.1)	(28.0)	(65.0)	(19.5)
-HPB-FN4-7-A		0.28		3.07	1.54	0.54	0.54	1.32	2.56	0.90
-HPB-FN4-7-3W		(7.1)		(78.0)	(39.0)	(13.8)	(13.8)	(33.5)	(65.0)	(22.8)
-HPB-FN6-7-A	3/8 Female NPT	0.28	4.0	3.23	1.61	0.54	0.54	1.32	2.56	0.90
-HPB-FN6-7-3W		(7.1)		(82.0)	(41.0)	(13.8)	(13.8)	(33.5)	(65.0)	(22.8)
-HPB-FN6-10-A		0.41		3.54	1.77	0.63	0.63	1.45	3.27	0.90
-HPB-FN6-10-3W	3/8 Female NPT	(10.3)	6.4	(90.4)	(45.2)	(16.0)	(16.0)	(37.0)	(83.0)	(22.8)
-HPB-FN8-10-A		0.41		3.80	1.90	1.90	0.63	1.45	3.27	0.90
-HPB-FN8-10-3W		(10.3)		(96.6)	(48.3)	(48.3)	(16.0)	(37.0)	(83.0)	(22.8)
-HPB-FN12-10-A	3/4 Female NPT	0.41	6.4	3.87	1.93	1.93	0.63	1.45	3.27	0.90
-HPB-FN12-10-3W		(10.3)		(98.2)	(49.1)	(49.1)	(16.0)	(37.0)	(83.0)	(22.8)
-HPB-MN2-5-A		0.19		2.57	1.29	1.29	0.44	1.10	2.56	0.77
-HPB-MN2-5-3W	1/8 Male NPT	(4.8)	1.2	(65.4)	(32.7)	(32.7)	(11.1)	(28.0)	(65.0)	(19.5)
-HPB-MN4-5-A		0.19		2.94	1.47	1.47	0.44	1.10	2.56	0.77
-HPB-MN4-5-3W		(4.8)		(74.7)	(37.4)	(37.4)	(11.1)	(28.0)	(65.0)	(19.5)
-HPB-MN6-5-A	3/8 Male NPT	0.19	1.2	2.94	1.47	1.47	0.44	1.10	2.56	0.77
-HPB-MN6-5-3W		(4.8)		(74.7)	(37.4)	(37.4)	(11.1)	(28.0)	(65.0)	(19.5)
-HPB-MN6-7-A		0.28		3.32	1.66	0.54	0.54	1.32	2.56	0.90
-HPB-MN6-7-3W	3/8 Male NPT	(7.1)	4.0	(84.4)	(42.2)	(13.8)	(13.8)	(33.5)	(65.0)	(22.8)
-HPB-MN8-10-A		0.41		4.02	2.01	2.01	0.63	1.45	3.27	0.90
-HPB-MN8-10-3W		(10.3)		(102.2)	(51.1)	(51.1)	(16.0)	(37.0)	(83.0)	(22.8)
-HPB-MN12-10-A	3/4 Male NPT	0.41	6.4	4.02	2.01	2.01	0.63	1.45	3.27	0.90
-HPB-MN12-10-3W		(10.3)		(102.2)	(51.1)	(51.1)	(16.0)	(37.0)	(83.0)	(22.8)
-HPB-FT2-2-A		1/8 Tube		0.09	0.3	3.02	1.51	1.51	0.44	1.10
-HPB-FT2-2-3W	(2.4)		(76.6)	(38.3)		(38.3)	(11.1)	(28.0)	(65.0)	(19.5)
-HPB-FT4-5-A	0.19		3.20	1.60		1.60	0.44	1.10	2.56	0.77
-HPB-FT4-5-3W	1/4 Tube	(4.8)	1.2	(81.4)	(40.7)	(40.7)	(11.1)	(28.0)	(65.0)	(19.5)
-HPB-FT6-5-A		0.19		3.34	1.67	1.67	0.44	1.10	2.56	0.77
-HPB-FT6-5-3W		(4.8)		(84.8)	(42.4)	(42.4)	(11.1)	(28.0)	(65.0)	(19.5)
-HPB-FT6-7-A	3/8 Tube	0.28	4.0	3.72	1.86	0.54	0.54	1.32	2.56	0.90
-HPB-FT6-7-3W		(7.1)		(94.6)	(47.3)	(13.8)	(13.8)	(33.5)	(65.0)	(22.8)
-HPB-FT8-7-A		0.28		3.95	1.97	0.54	0.54	1.32	2.56	0.90
-HPB-FT8-7-3W	1/2 Tube	(7.1)	4.0	(100.2)	(55.1)	(13.8)	(13.8)	(33.5)	(65.0)	(22.8)
-HPB-FT8-10-A		0.41		4.26	2.13	2.13	0.63	1.45	3.27	0.90
-HPB-FT8-10-3W		(10.3)		(108.3)	(54.2)	(54.2)	(16.0)	(37.0)	(83.0)	(22.8)
-HPB-FT12-10-A	3/4 Tube	0.41	6.4	4.26	2.13	2.13	0.63	1.45	3.27	0.90
-HPB-FT12-10-3W		(10.3)		(108.3)	(54.2)	(54.2)	(16.0)	(37.0)	(83.0)	(22.8)

Basic Ordering Number	Connection Type and Size	Orifice in.(mm)	Cv	Dimension, in.(mm)						
				A	B	C	D	E	F	H
-HPB-MT3-2-A	3mm Tube	0.09 (2.4)	0.3	3.02	1.51	1.51	0.44	1.10	2.56	0.77
-HPB-MT3-2-3W				(76.6)	(38.3)	(38.3)	(11.1)	(28.0)	(65.0)	(19.5)
-HPB-MT6-5-A	6mm Tube	0.19 (4.8)	1.2	3.20	1.60	1.60	0.44	1.10	2.56	0.77
-HPB-MT6-5-3W				(81.3)	(40.7)	(40.7)	(11.1)	(28.0)	(65.0)	(19.5)
-HPB-MT8-5-A	8mm Tube	0.19 (4.8)	1.2	3.28	1.64	1.64	0.44	1.10	2.56	0.77
-HPB-MT8-5-3W				(83.3)	(41.7)	(41.7)	(11.1)	(28.0)	(65.0)	(19.5)
-HPB-MT10-5-A	10mm Tube	0.19 (4.8)	1.2	3.35	1.68	1.68	0.44	1.10	2.56	0.77
-HPB-MT10-5-3W				(85.2)	(42.6)	(42.6)	(11.1)	(28.0)	(65.0)	(19.5)
-HPB-MT10-7-A	10mm Tube	0.28 (7.1)	4.0	3.75	1.88	0.54	0.54	1.32	2.56	0.90
-HPB-MT10-7-3W				(95.2)	(47.6)	(13.8)	(13.8)	(33.5)	(65.0)	(22.8)
-HPB-MT12-7-A	12mm Tube	0.28 (7.1)	4.0	3.95	1.97	0.54	0.54	1.32	2.56	0.90
-HPB-MT12-7-3W				(100.2)	(55.1)	(13.8)	(13.8)	(33.5)	(65.0)	(22.8)
-HPB-MT12-10-A	12mm Tube	0.41 (10.3)	6.4	4.26	2.13	2.13	0.63	1.45	3.27	0.90
-HPB-MT12-10-3W				(108.2)	(54.2)	(54.2)	(16.0)	(37.0)	(83.0)	(22.8)
-HPB-MT14-10-A	14mm Tube	0.41 (10.3)	6.4	4.26	2.13	2.13	0.63	1.45	3.27	0.90
-HPB-MT14-10-3W				(108.2)	(54.2)	(54.2)	(16.0)	(37.0)	(83.0)	(22.8)
-HPB-MT16-10-A	16mm Tube	0.41 (10.3)	6.4	4.26	2.13	2.13	0.63	1.45	3.27	0.90
-HPB-MT16-10-3W				(108.2)	(54.2)	(54.2)	(16.0)	(37.0)	(83.0)	(22.8)
-HPB-MT18-10-A	18mm Tube	0.41 (10.3)	6.4	4.26	2.13	2.13	0.63	1.45	3.27	0.90
-HPB-MT18-10-3W				(108.2)	(54.2)	(54.2)	(16.0)	(37.0)	(83.0)	(22.8)

- Sizes and types listed are standard. Other sizes and types are available upon request, refer to the ordering information.
- Dimensions are shown with Beyond Fluid 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 Beyond Fluid employees.

## Pressure vs. Temperature



## Temperature Ranges

Packing Materials	Temperature Range °F (°C)
PTFE	-65 to 450 (-54 to 232)
Buna-N	-40 to 250 (-40 to 121)
Fluorocarbon FKM	-15 to 450 (-26 to 232)
Neoprene	-40 to 250 (-40 to 121)

# Alternative Fuel Service Ball Valves

## AFS Series (6000 psig)

### Features

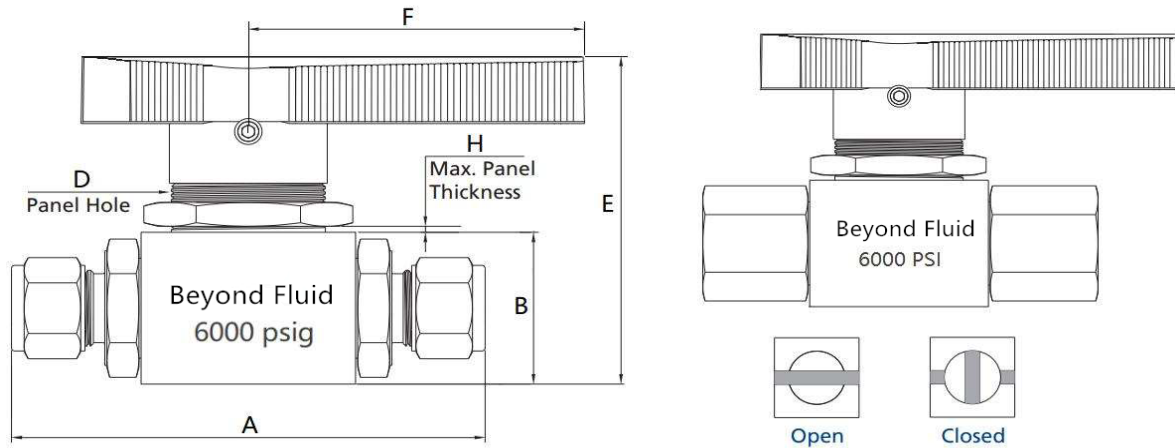
- ⦿ Spring-loaded seat provides leak-tight integrity in both low-and high-pressure systems and reduces seat wear from pressure surges
- ⦿ High flow-Cv from 4.0 to 13.8
- ⦿ Low operating torque.
- ⦿ All welded components are compatible with hydrogen and compressed natural gas (CNG)
- ⦿ No packing adjustment required
- ⦿ Bidirectional flow
- ⦿ Options for handle color.
- ⦿ Pneumatic actuators available
- ⦿ Leak-tight performance testing for every valve at the maximum working pressure with nitrogen.
- ⦿ Maximum working pressure: 6000 psig (414 bar).
- ⦿ Working temperature: -40°F to 250°F (-40°C to 121°C).



### Standard Materials of Construction:

Construction	NO.	Component	Material
	1	Handle	Nylon
	2	Seat Screw	S17400 SS/A564
	3	Guide ring	PTFE/D1710
	4	Stem	316 SS/A479
	5	Packing Bolt	316 SS/A479
	6	Stem Backup Ring	PEEK
	7	Lock Nut	316 SS/A479
	8	Stem O-ring	Low-temperature fluorocarbon
	9	Packing bolt washer	Silver-plated 316 SS
	10	Thrust washer	PEEK
	11	Coned-disc spring	316 SS/A240
	12	Seat gland	316 SS/A479
	13	Seat Backup ring	PTFE/D1710
	14	Seat O-ring	Low-temperature fluorocarbon
	15	Seat	PEEK
	16	End Gasket	Silver-plated 316 SS
	17	Ball	316 SS/A479
	18	Body	316 SS/A479
	19	End Connector	316 SS/A276

## Dimensions AFS Series



Basic Ordering Number	Connection Type and Size	Orifice in.(mm)	Cv	Dimension, in.(mm)					
				A	B	E	F	D	H
-AFS-FN2-5	1/8 Female NPT	0.19 (4.8)	1.2	2.47 (67.8)	0.91 (23.0)	2.17 (55.0)	1.58 (40.0)	0.77 (19.5)	0.25 (6.4)
-AFS-FN4-5	1/4 Female NPT	0.19 (4.8)	1.2	2.95 (75.0)	0.91 (23.0)	2.17 (55.0)	1.58 (40.0)	0.77 (19.5)	0.25 (6.4)
-AFS-FN4-7	1/4 Female NPT	0.28 (7.1)	4.0	3.00 (88.9)	1.13 (28.6)	2.64 (67.0)	2.05 (52.0)	1.08 (27.5)	0.31 (7.9)
-AFS-FN6-7	3/8 Female NPT	0.28 (7.1)	4.0	3.00 (88.9)	1.13 (28.6)	2.64 (67.0)	2.05 (52.0)	1.08 (27.5)	0.31 (7.9)
-AFS-FN6-10	3/8 Female NPT	0.41 (10.3)	6.4	3.79 (96.2)	1.50 (38.1)	3.25 (82.5)	3.07 (78.0)	1.46 (37.0)	0.35 (9.0)
-AFS-FN8-12	1/2 Female NPT	0.47 (12.0)	7.8	3.97 (100.8)	1.50 (38.1)	3.25 (82.5)	3.07 (78.0)	1.46 (37.0)	0.35 (9.0)
-AFS-FN12-12	3/4 Female NPT	0.47 (12.0)	7.8	4.09 (104)	1.50 (38.1)	3.25 (82.5)	3.07 (78.0)	1.46 (37.0)	0.35 (9.0)
-AFS-MN2-5	1/8 Male NPT	0.19 (4.8)	1.2	2.79 (70.8)	0.91 (23.0)	2.17 (55.0)	1.58 (40.0)	0.77 (19.5)	0.25 (6.4)
-AFS-MN4-5	1/4 Male NPT	0.19 (4.8)	1.2	3.14 (79.8)	0.91 (23.0)	2.17 (55.0)	1.58 (40.0)	0.77 (19.5)	0.25 (6.4)
-AFS-MN6-7	3/8 Male NPT	0.28 (7.1)	4.0	3.52 (89.4)	1.13 (28.6)	2.64 (67.0)	2.05 (52.0)	1.08 (27.5)	0.31 (7.9)
-AFS-MN8-7	1/2 Male NPT	0.28 (7.1)	4.0	3.90 (99.1)	1.13 (28.6)	2.64 (67.0)	2.05 (52.0)	1.08 (27.5)	0.31 (7.9)
-AFS-MN8-12	1/2 Male NPT	0.47 (12.0)	7.8	4.29 (109)	1.50 (38.1)	3.25 (82.5)	3.07 (78.0)	1.46 (37.0)	0.35 (9.0)
-AFS-MN12-12	3/4 Male NPT	0.47 (12.0)	7.8	4.48 (114)	1.50 (38.1)	3.25 (82.5)	3.07 (78.0)	1.46 (37.0)	0.35 (9.0)
-AFS-FT4-5	1/4 Tube	0.19 (4.8)	1.2	3.41 (86.6)	0.91 (23.0)	2.17 (55.0)	1.58 (40.0)	0.77 (19.5)	0.25 (6.4)
-AFS-FT6-5	3/8 Tube	0.19 (4.8)	1.2	3.55 (90.2)	0.91 (23.0)	2.17 (55.0)	1.58 (40.0)	0.77 (19.5)	0.25 (6.4)
-AFS-FT6-7	3/8 Tube	0.28 (7.1)	4.0	3.92 (99.6)	1.13 (28.6)	2.64 (67.0)	2.05 (52.0)	1.08 (27.5)	0.31 (7.9)
-AFS-FT8-7	1/2 Tube	0.28 (7.1)	4.0	4.17 (106)	1.13 (28.6)	2.64 (67.0)	2.05 (52.0)	1.08 (27.5)	0.31 (7.9)
-AFS-FT8-10	1/2 Tube	0.41 (10.3)	6.4	4.57 (116)	1.50 (38.1)	3.25 (82.5)	3.07 (78.0)	1.46 (37.0)	0.35 (9.0)
-AFS-FT12-12	3/4 Tube	0.47 (12.0)	7.8	4.57 (116)	1.50 (38.1)	3.25 (82.5)	3.07 (78.0)	1.46 (37.0)	0.35 (9.0)
-AFS-MT6-5	6mm Tube	0.19 (4.8)	1.2	3.41 (86.6)	0.91 (23.0)	2.17 (55.0)	1.58 (40.0)	0.77 (19.5)	0.25 (6.4)
-AFS-MT8-75	8mm Tube	0.19 (4.8)	1.2	3.55 (90.2)	0.91 (23.0)	2.17 (55.0)	1.58 (40.0)	0.77 (19.5)	0.25 (6.4)
-AFS-MT10-7	10mm Tube	0.28 (7.1)	4.0	3.92 (99.6)	1.13 (28.6)	2.64 (67.0)	2.05 (52.0)	1.08 (27.5)	0.31 (7.9)
-AFS-MT12-7	12mm Tube	0.28 (7.1)	4.0	4.17 (106)	1.13 (28.6)	2.64 (67.0)	2.05 (52.0)	1.08 (27.5)	0.31 (7.9)
-AFS-MT12-10	12mm Tube	0.41 (10.3)	6.4	4.57 (116)	1.50 (38.1)	3.25 (82.5)	3.07 (78.0)	1.46 (37.0)	0.35 (9.0)
-AFS-MT18-12	18mm Tube	0.47 (12.0)	7.8	4.57 (116)	1.50 (38.1)	3.25 (82.5)	3.07 (78.0)	1.46 (37.0)	0.35 (9.0)

1. Sizes and types listed are standard. Other sizes and types are available upon request, refer to the ordering information.
2. Dimensions are shown with Beyond Fluid nuts finger-tightened. All dimensions are for reference only and are subject to change.
3. For dimensions not shown above, please contact the authorized representative or Beyond Fluid employees.

# Bar Stock Ball Valves

## BSB Series (10000 psig)

### Features

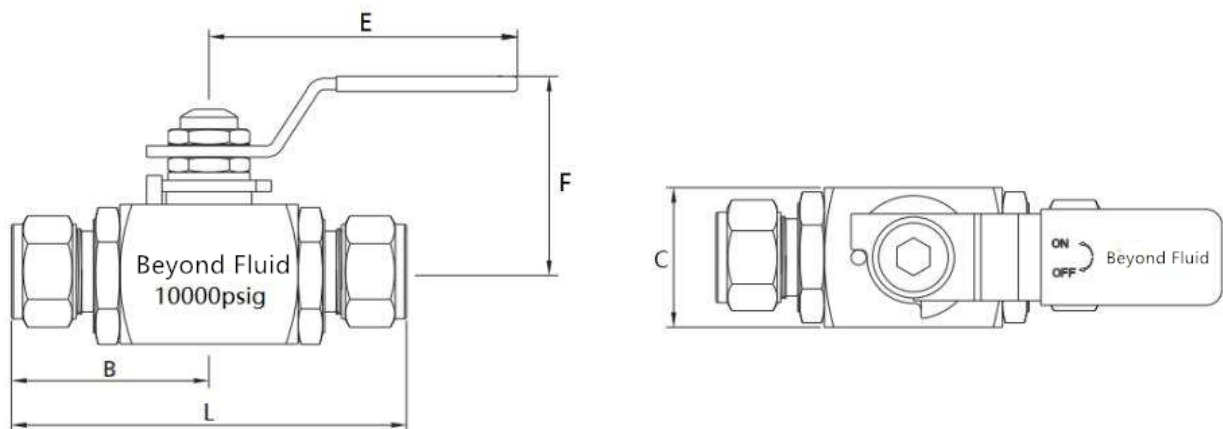
- Bi-directional flow for 2-way valves.
- Seat wear compensation by free floating ball Variety of end connections.
- Blowout proof stem with self-sealing function.
- Options for handle color.
- Optional pneumatic and electric actuator.
- Leak-tight performance testing with nitrogen for every valve at the maximum working pressure, but not higher than 6000 psig.
- Maximum working pressure: 10000 psig (689 bar).
- Working temperature: -40°F to 450°F (-40°C to 232°C).



### Standard Materials of Construction

Construction	NO.	Component	Material	
			316 SS	Allo 400
	1	End Connector	316 SS/A276	Alloy 400B164
	2	Ball	316 SS/A479	Alloy 400B164
	3	O-ring	Fluorocarbon FKM	
	4	Body	316 SS/A276	Alloy 400B164
	5	Seat	PVDF or PCTFE or PEEK	
	6	Stop Pin	Stainless Steel	
	7	Stem Packing	PTFE	
	8	Stem Washer	316 SS/A276	
	9	Stem Nut	316 SS/A276	
	10	Spring Washer	316 SS/A276	
	11	Stem	316 SS/A276	Alloy 400B164
	12	Stop Block	304 SS/A240	
	13	Handle	Stainless Steel	

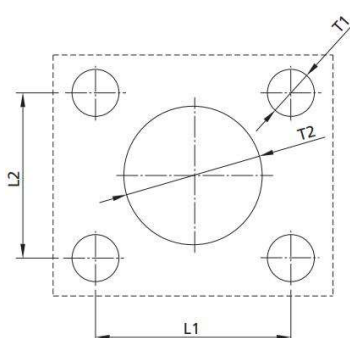
### Dimensions BSB Series



Basic Ordering Number	Connection Type and Size	Orifice in.(mm)	Cv	Dimension, in.(mm)				
				L	B	C	E	F
-BSB-FN4-10	1/4 Female NPT	0.41 (10.3)	7.5	2.80 (71.0)	1.40 (35.5)	1.30 (32.0)	5.12 (130)	1.73 (44.0)
-BSB-FN6-10	3/8 Female NPT	0.41 (10.3)	7.5	2.80 (71.0)	1.40 (35.5)	1.30 (32.0)	5.12 (130)	1.73 (44.0)
-BSB-FN8-10	1/2 Female NPT	0.41 (10.3)	7.5	3.11 (79.0)	1.56 (39.5)	1.30 (32.0)	5.12 (130)	1.73 (44.0)
-BSB-FN8-13	1/2 Female NPT	0.50 (12.7)	10	3.45 (90.0)	1.77 (45.0)	1.50 (38.0)	5.71 (145)	1.89 (48.0)
-BSB-FN12-13	3/4 Female NPT	0.50 (12.7)	10	4.09 (104)	2.05 (52.0)	1.50 (38.0)	5.71 (145)	1.89 (48.0)
-BSB-FN12-18	3/4 Female NPT	0.71 (18.0)	30	3.81 (96.8)	1.91 (48.4)	1.96 (50.0)	6.30 (160)	2.08 (53.0)
-BSB-FN16-18	1 Female NPT	0.71 (18.0)	30	4.80 (122)	2.40 (61.0)	1.96 (50.0)	6.30 (160)	2.08 (53.0)
-BSB-MN4-7	1/4 Male NPT	0.28 (7.1)	3.7	3.36 (85.4)	1.68 (42.7)	1.30 (32.0)	5.12 (130)	1.73 (44.0)
-BSB-MN6-10	3/8 Male NPT	0.28 (7.1)	3.7	3.36 (85.4)	1.68 (42.7)	1.30 (32.0)	5.12 (130)	1.73 (44.0)
-BSB-MN8-10	1/2 Male NPT	0.41 (10.3)	7.5	3.75 (95.2)	1.88 (47.6)	1.30 (32.0)	5.12 (130)	1.73 (44.0)
-BSB-MN12-13	3/4 Male NPT	0.50 (12.7)	10	4.14 (105.2)	2.07 (52.6)	1.50 (38.0)	5.71 (145)	1.89 (48.0)
-BSB-MN12-18	3/4 Male NPT	0.71 (18.0)	19	4.54 (115.2)	2.27 (57.6)	1.96 (50.0)	6.30 (160)	2.08 (53.0)
-BSB-MN16-18	1 Male NPT	0.71 (18.0)	30	4.91 (124.8)	2.45 (62.4)	1.96 (50.0)	6.30 (160)	2.08 (53.0)
-BSB-FT4-5	1/4 Tube	0.19 (4.8)	1.2	3.60 (91.6)	1.80 (45.8)	1.30 (32.0)	5.12 (130)	1.73 (44.0)
-BSB-FT6-7	3/8 Tube	0.39 (7.1)	3.7	3.72 (94.6)	1.86 (47.3)	1.30 (32.0)	5.12 (130)	1.73 (44.0)
-BSB-FT8-10	1/2 Tube	0.41 (10.3)	7.5	3.92 (99.6)	1.96 (49.8)	1.30 (32.0)	5.12 (130)	1.73 (44.0)
-BSB-FT10-13	5/8 Tube	0.50 (12.7)	10	4.36 (110.6)	2.29 (58.3)	1.50 (38.0)	5.71 (145)	1.89 (48.0)
-BSB-FT12-13	3/4 Tube	0.50 (12.7)	10	4.36 (110.6)	2.29 (58.3)	1.50 (38.0)	5.71 (145)	1.89 (48.0)
-BSB-FT12-18	3/4 Tube	0.71 (18.0)	19	4.59 (116.6)	2.29 (58.3)	1.96 (50.0)	6.30 (160)	2.08 (53.0)
-BSB-FT16-18	1 Tube	0.71 (18.0)	30	5.11 (129.8)	2.66 (64.9)	1.96 (50.0)	6.30 (160)	2.08 (53.0)
-BSB-MT6-5	6mm Tube	0.19 (4.8)	1.2	3.56 (90.4)	1.78 (45.2)	1.30 (32.0)	5.12 (130)	1.73 (44.0)
-BSB-MT8-6	8mm Tube	0.25 (6.4)	2.3	3.60 (91.6)	1.80 (45.8)	1.30 (32.0)	5.12 (130)	1.73 (44.0)
-BSB-MT10-7	10mm Tube	0.39 (7.1)	3.7	3.72 (94.6)	1.86 (47.3)	1.30 (32.0)	5.12 (130)	1.73 (44.0)
-BSB-MT12-10	12mm Tube	0.41 (10.3)	7.5	3.92 (99.6)	1.96 (49.8)	1.30 (32.0)	5.12 (130)	1.73 (44.0)
-BSB-MT14-10	14mm Tube	0.41 (10.3)	7.5	3.94 (100)	1.97 (50.0)	1.30 (32.0)	5.12 (130)	1.73 (44.0)
-BSB-MT16-13	16mm Tube	0.50 (12.7)	10	4.42 (112.2)	2.21 (56.1)	1.50 (38.0)	5.71 (145)	1.89 (48.0)
-BSB-MT18-13	18mm Tube	0.50 (12.7)	10	4.42 (112.2)	2.21 (56.1)	1.50 (38.0)	5.71 (145)	1.89 (48.0)
-BSB-MT20-13	20mm Tube	0.50 (12.7)	10	4.44 (112.8)	2.22 (56.4)	1.50 (38.0)	5.71 (145)	1.89 (48.0)
-BSB-MT22-18	22mm Tube	0.50 (12.7)	10	4.44 (112.8)	2.22 (56.4)	1.50 (38.0)	5.71 (145)	1.89 (48.0)
-BSB-MT22-18	22mm Tube	0.71 (18.0)	19	4.87 (123.8)	2.43 (61.9)	1.96 (50.0)	6.30 (160)	2.08 (53.0)
-BSB-MT25-18	25mm Tube	0.71 (18.0)	30	5.11 (129.8)	2.66 (64.9)	1.96 (50.0)	6.30 (160)	2.08 (53.0)

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2. Dimensions are shown with Beyond Fluid nuts finger-tightened. All dimensions are for reference only and are subject to change.
3. For dimensions not shown above, please contact the authorized representative or Beyond Fluid employees.

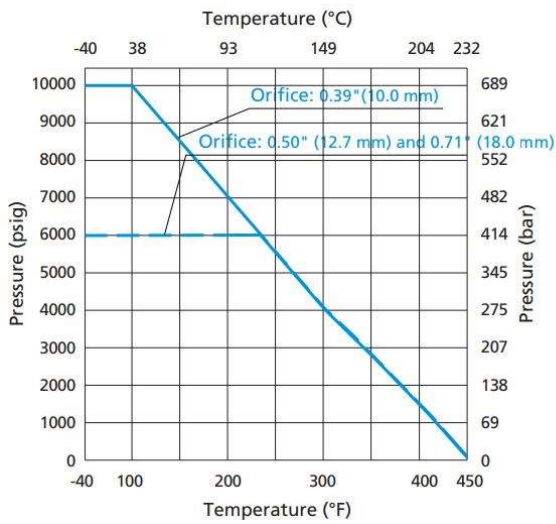
# Panel Mounting Options



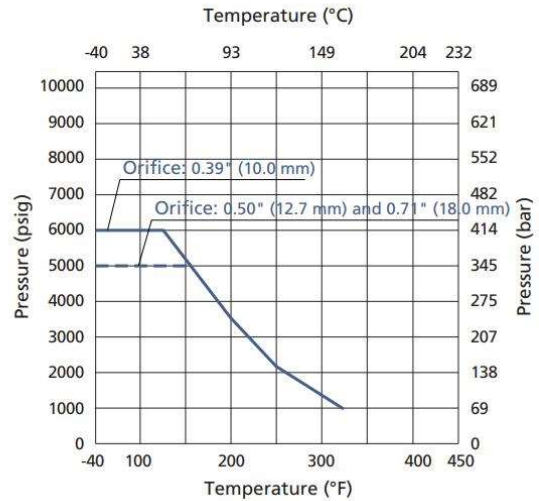
Orifice in.(mm)	L1 in.(mm)	L2 in.(mm)	T1 in.(mm)	T2 in.(mm)	Panel Thickness in. (mm)
0.39 (10.0)	1.02 (26.0)	1.02 (26.0)	0.20 (5.0)	1.18 (30.0)	Max. 3/8  (9.5)
0.50 (12.7)	1.18 (30.0)	1.18 (30.0)	0.20 (5.0)	1.50 (38.0)	
0.71 (18.0)	1.42 (36.0)	1.42 (36.0)	0.20 (5.0)	1.50 (38.0)	

## Pressure vs. Temperature

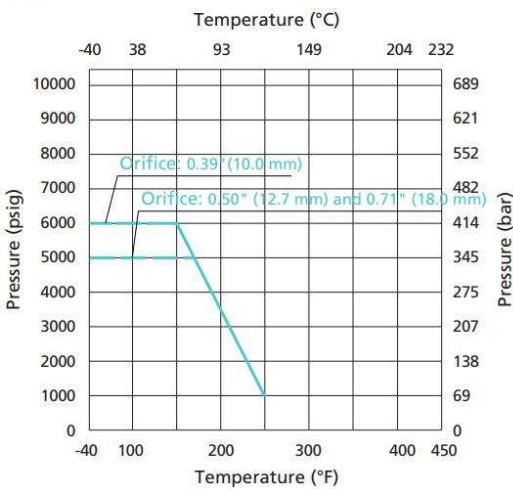
PEEK



PVDF



PCTFE



# Trunnion Ball Valves

**TB Series (6000 psig)**

**TBH Series (10000 psig)**

## Features

- ⦿ Fixed ball with double sealing.
- ⦿ Automatic compensation of seat sealing.
- ⦿ Low operating torque.
- ⦿ Handle as indicator of flow direction.
- ⦿ Positive handle stop.
- ⦿ Handle color options are available.
- ⦿ Compact maximum-flow design.
- ⦿ Trunnion-style ball: Prevents ball blow out.
- ⦿ 2- or 3-way flow patterns.
- ⦿ Spring-loadseats: Provide leak tight integrity in both low and high-pressure systems, reduce seat wear from pressure surges.
- ⦿ Leak-tight performance testing for every valve at the maximum working pressure with nitrogen.
- ⦿ Maximum working pressure:  
TB Series: 6000 psig (414 bar).  
TBH Series: 10000 psig (689 bar).
- ⦿ Working temperature: -65°F to 450°F (-54°C to 232°C).

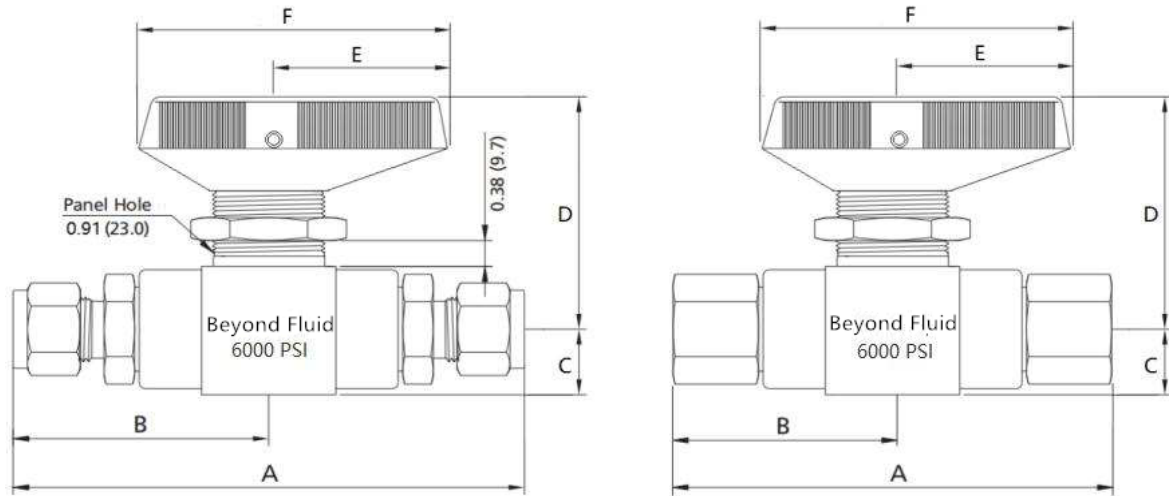


## Standard Materials of Construction

Construction	NO.	Component	Material	
			316 SS	Alloy 400
	1	Handle	Nylon or Aluminium	
	2	Panel Nut	316 SS/B783	
	3	Body	316 SS/A479	Alloy 400/B164
	4	End Connector	316 SS/A276	Alloy R-405/B164
	5	Seat Retainer Backup Ring	Reinforced PTFE	
	6	Seat Retainer O-ring	Fluorocarbon FKM	
	7	Seat Retainer Guide	316 SS/A276	Alloy R-405/B164
	8	End Connector Seal	PTFE/D1710	
	9	Trunnion O-ring	Fluorocarbon FKM	
	10	Trunnion Backup Ring	Reinforced PTFE	
	11	Trunnion Bearing	PEEK	
	12	Ball	316 SS/A276	Alloy R-405/B164
	13	Seat Spring	Alloy X-750/AMS 5542	
	14	Seat Retainer	316 SS/A276	Alloy R-405/B164
	15	Seat	PTFE or PEEK or PCTFE	
	16	Stem	316 SS/A276	Alloy R-405/B164
	17	Stem Washer	PEEK	
	18	Stem O-ring	Fluorocarbon FKM	
	19	Secondary Stem Backup Ring	PTFE/D1710	
	20	Primary Stem Backup Ring	PEEK	
	21	Pin	Stainless Steel	
	22	Set Screw	Stainless Steel	

# TB Series-6000PSI

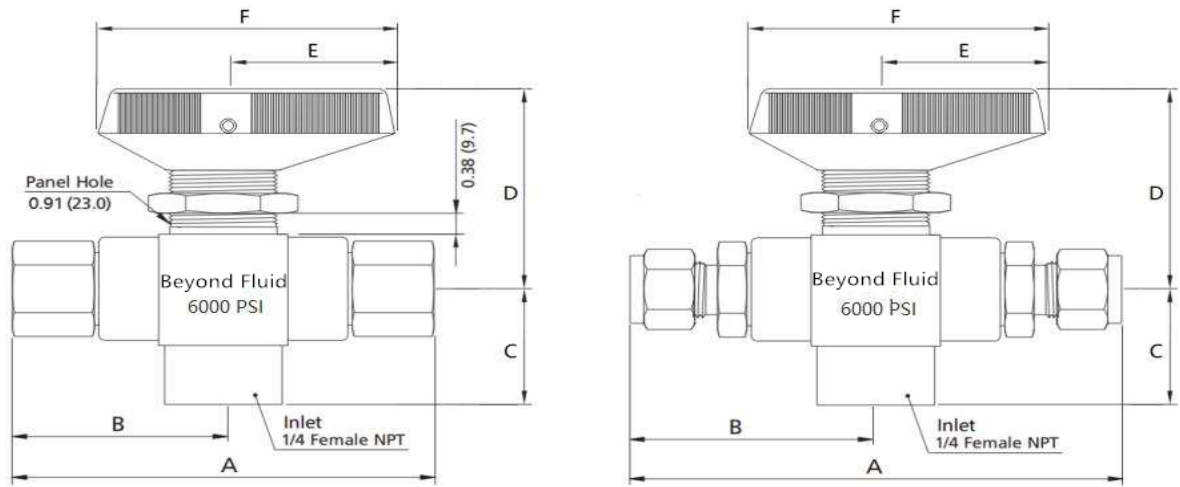
## 2-way Valves



Basic Ordering Number	Connection Type and Size	Orifice in.(mm)	Cv	Dimension, in.(mm)					
				A	B	C	D	E	F
-TB-FN2-5	1/8 Female NPT	0.19 (4.8)	1.2	2.94 (74.7)	1.47 (37.3)	0.50 (12.7)	1.88 (47.7)	1.57 (40.0)	2.56 (65.0)
-TB-FN4-5	1/4 Female NPT	0.19 (4.8)	1.2	2.94 (74.7)	1.47 (37.3)	0.50 (12.7)	1.88 (47.7)	1.57 (40.0)	2.56 (65.0)
-TB-FN6-7	3/8 Female NPT	0.19 (4.8)	1.2	3.93 (99.8)	1.97 (49.9)	0.50 (12.7)	1.88 (47.7)	1.57 (40.0)	2.56 (65.0)
-TB-FN8-5	1/2 Female NPT	0.19 (4.8)	1.2	4.25 (108)	2.13 (54.0)	0.50 (12.7)	1.88 (47.7)	1.57 (40.0)	2.56 (65.0)
-TB-FT4-5	1/4 Tube	0.19 (4.8)	1.2	4.09 (103.8)	2.04 (51.9)	0.50 (12.7)	1.88 (47.7)	1.57 (40.0)	2.56 (65.0)
-TB-FT6-5	3/8 Tube	0.19 (4.8)	1.2	4.25 (108)	2.13 (54.0)	0.50 (12.7)	1.88 (47.7)	1.57 (40.0)	2.56 (65.0)
-TB-FT8-5	1/2 Tube	0.19 (4.8)	1.2	4.60 (116.8)	2.30 (58.4)	0.50 (12.7)	1.88 (47.7)	1.57 (40.0)	2.56 (65.0)
-TB-MT4-5	6mm Tube	0.19 (4.8)	1.2	4.09 (103.8)	2.04 (51.9)	0.50 (12.7)	1.88 (47.7)	1.57 (40.0)	2.56 (65.0)
-TB-MT8-5	8mm Tube	0.19 (4.8)	1.2	4.14 (105.2)	2.07 (52.6)	0.50 (12.7)	1.88 (47.7)	1.57 (40.0)	2.56 (65.0)
-TB-MT10-5	10mm Tube	0.19 (4.8)	1.2	4.25 (108)	2.13 (54.0)	0.50 (12.7)	1.88 (47.7)	1.57 (40.0)	2.56 (65.0)
-TB-MT12-5	12mm Tube	0.19 (4.8)	1.2	4.60 (116.8)	2.30 (58.4)	0.50 (12.7)	1.88 (47.7)	1.57 (40.0)	2.56 (65.0)

# TB Series-6000PSI

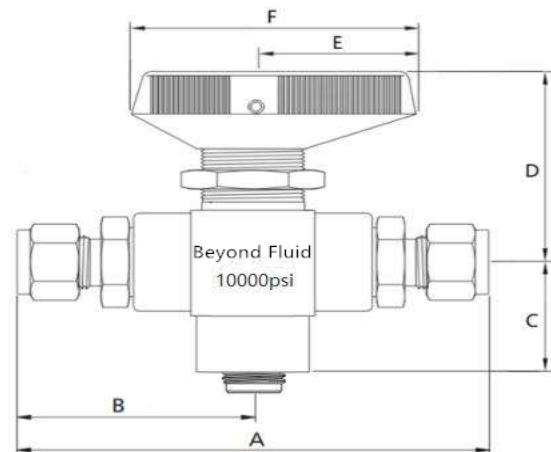
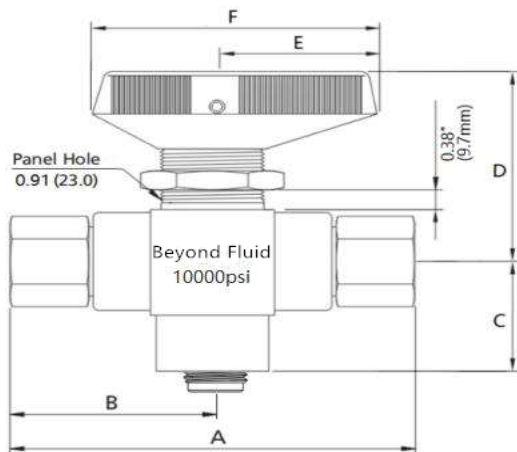
## 3-way Valves



Basic Ordering Number	Connection Type and Size	Orifice in.(mm)	Cv	Dimension, in.(mm)					
				A	B	C	D	E	F
-TB-FN2-5-3W	1/8 Female NPT	0.19 (4.8)	0.75	2.94 (74.7)	1.47 (37.3)	1.06 (26.9)	1.88 (47.7)	1.57 (40.0)	2.56 (65.0)
-TB-FN4-5-3W	1/4 Female NPT	0.19 (4.8)	0.75	2.94 (74.7)	1.47 (37.3)	1.06 (26.9)	1.88 (47.7)	1.57 (40.0)	2.56 (65.0)
-TB-FN6-7-3W	3/8 Female NPT	0.19 (4.8)	0.75	3.93 (99.8)	1.97 (49.9)	1.06 (26.9)	1.88 (47.7)	1.57 (40.0)	2.56 (65.0)
-TB-FN6-8-3W	3/8 Female NPT	0.32 (8.0)	4.8	4.57 (116)	2.28 (58.0)	1.38 (35.0)	2.40 (61.0)	3.97 (78.0)	4.35 (110.5)
-TB-FN8-5-3W	1/2 Female NPT	0.19 (4.8)	0.75	4.25 (108)	2.13 (54.0)	1.06 (26.9)	1.88 (47.7)	1.57 (40.0)	2.56 (65.0)
-TB-FN8-5-3W	1/2 Female NPT	0.32 (8.0)	4.8	4.57 (116)	2.28 (58.0)	1.38 (35.0)	2.40 (61.0)	3.97 (78.0)	4.35 (110.5)
-TB-FT4-5-3W	1/4 Tube	0.19 (4.8)	0.75	4.09 (103.8)	2.04 (51.9)	1.06 (26.9)	1.88 (47.7)	1.57 (40.0)	2.56 (65.0)
-TB-FT6-5-3W	3/8 Tube	0.19 (4.8)	0.75	4.25 (108)	2.13 (54.0)	1.06 (26.9)	1.88 (47.7)	1.57 (40.0)	2.56 (65.0)
-TB-FT6-8-3W	3/8 Tube	0.32 (8.0)	4.8	4.87 (123.7)	2.44 (61.9)	1.38 (35.0)	2.40 (61.0)	3.97 (78.0)	4.35 (110.5)
-TB-FT8-5-3W	1/2 Tube	0.19 (4.8)	0.75	4.60 (116.8)	2.30 (58.4)	1.06 (26.9)	1.88 (47.7)	1.57 (40.0)	2.56 (65.0)
-TB-FT8-8-3W	1/2 Tube	0.32 (8.0)	4.8	5.09 (129.2)	2.54 (64.6)	1.38 (35.0)	2.40 (61.0)	3.97 (78.0)	4.35 (110.5)
-TB-MT4-5-3W	6mm Tube	0.19 (4.8)	0.75	4.09 (103.8)	2.04 (51.9)	1.06 (26.9)	1.88 (47.7)	1.57 (40.0)	2.56 (65.0)
-TB-MT8-5-3W	8mm Tube	0.19 (4.8)	0.75	4.14 (105.2)	2.07 (52.6)	1.06 (26.9)	1.88 (47.7)	1.57 (40.0)	2.56 (65.0)
-TB-MT10-5-3W	10mm Tube	0.19 (4.8)	0.75	4.25 (108)	2.13 (54.0)	1.06 (26.9)	1.88 (47.7)	1.57 (40.0)	2.56 (65.0)
-TB-MT10-8-3W	10mm Tube	0.32 (8.0)	4.8	4.87 (123.7)	2.44 (61.9)	1.38 (35.0)	2.40 (61.0)	3.97 (78.0)	4.35 (110.5)
-TB-MT12-5-3W	12mm Tube	0.19 (4.8)	0.75	4.60 (116.8)	2.30 (58.4)	1.06 (26.9)	1.88 (47.7)	1.57 (40.0)	2.56 (65.0)
-TB-MT12-8-3W	12mm Tube	0.32 (8.0)	4.8	5.09 (129.2)	2.54 (64.6)	1.38 (35.0)	2.40 (61.0)	3.97 (78.0)	4.35 (110.5)

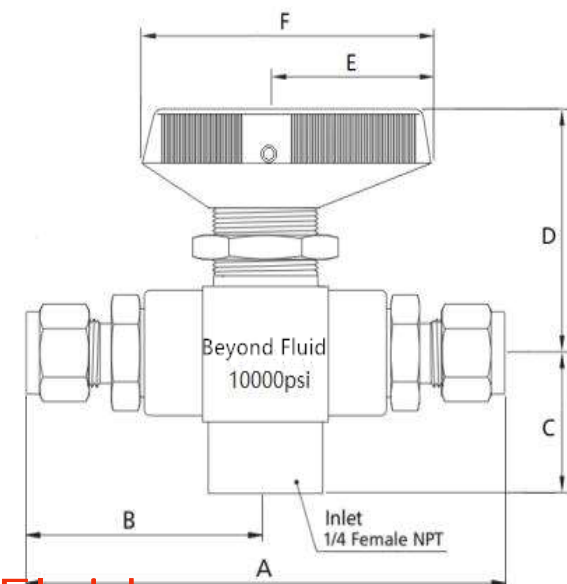
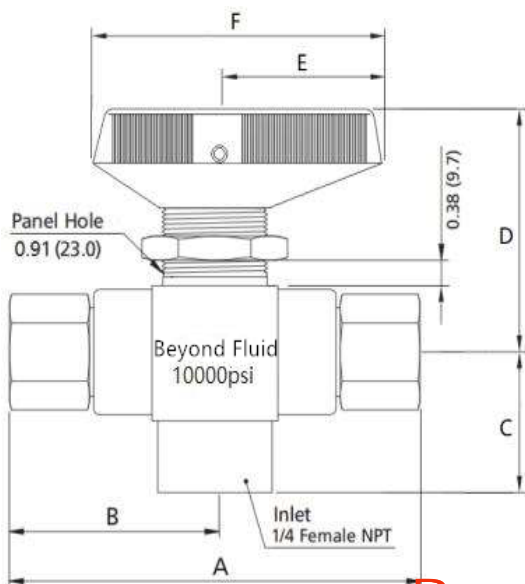
## TBH Series-10000PSI

### 2-way Valves



Basic Ordering Number	Connection Type and Size	Orifice in.(mm)	Cv	Dimension, in.(mm)					
				A	B	C	D	E	F
-TBH-FN2-5	1/8 Female NPT	0.19 (4.8)	1.2	2.94 (74.7)	1.47 (37.3)	0.50 (12.7)	1.88 (47.7)	1.57 (40.0)	2.56 (65.0)
-TBH-FN4-5	1/4 Female NPT	0.19 (4.8)	1.2	3.93 (99.8)	1.96 (49.9)	0.50 (12.7)	1.88 (47.7)	1.57 (40.0)	2.56 (65.0)
-TBH-FN8-5	1/2 Female NPT	0.19 (4.8)	1.2	4.25 (108)	2.13 (54.0)	0.50 (12.7)	1.88 (47.7)	1.57 (40.0)	2.56 (65.0)
-TBH-FT4-5	1/4 Tube	0.19 (4.8)	1.2	4.09 (103.8)	2.04 (51.9)	0.50 (12.7)	1.88 (47.7)	1.57 (40.0)	2.56 (65.0)
-TBH-FT6-5	3/8 Tube	0.19 (4.8)	1.2	4.25 (108)	2.13 (54.0)	0.50 (12.7)	1.88 (47.7)	1.57 (40.0)	2.56 (65.0)
-TBH-FT8-5	1/2 Tube	0.19 (4.8)	1.2	4.60 (116.8)	2.30 (58.4)	0.50 (12.7)	1.88 (47.7)	1.57 (40.0)	2.56 (65.0)
-TBH-MT4-5	6mm Tube	0.19 (4.8)	1.2	4.09 (103.8)	2.04 (51.9)	0.50 (12.7)	1.88 (47.7)	1.57 (40.0)	2.56 (65.0)
-TBH-MT8-5	8mm Tube	0.19 (4.8)	1.2	4.14 (105.2)	2.07 (52.6)	0.50 (12.7)	1.88 (47.7)	1.57 (40.0)	2.56 (65.0)
-TBH-MT10-5	10mm Tube	0.19 (4.8)	1.2	4.25 (108)	2.13 (54.0)	0.50 (12.7)	1.88 (47.7)	1.57 (40.0)	2.56 (65.0)
-TBH-MT12-5	12mm Tube	0.19 (4.8)	1.2	4.60 (116.8)	2.30 (58.4)	0.50 (12.7)	1.88 (47.7)	1.57 (40.0)	2.56 (65.0)

### 3-way Valves



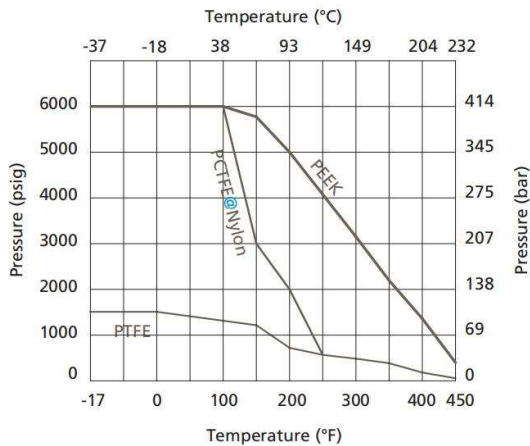
Beyond Fluid

Basic Ordering Number	Connection Type and Size	Orifice in.(mm)	Cv	Dimension, in.(mm)					
				A	B	C	D	E	F
-TBH-FN2-5-3W	1/8 Female NPT	0.19 (4.8)	0.75	2.94 (74.7)	1.47 (37.3)	1.06 (26.9)	1.88 (47.7)	1.57 (40.0)	2.56 (65.0)
-TBH-FN4-5-3W	1/4 Female NPT	0.19 (4.8)	0.75	2.94 (74.7)	1.47 (37.3)	1.06 (26.9)	1.88 (47.7)	1.57 (40.0)	2.56 (65.0)
-TBH-FN8-9-3W	1/2 Female NPT	0.19 (4.8)	0.75	4.25 (108)	2.13 (54.0)	1.06 (26.9)	1.88 (47.7)	1.57 (40.0)	2.56 (65.0)
-TBH-FT4-5-3W	1/4 Tube	0.19 (4.8)	0.75	4.09 (103.8)	2.04 (51.9)	1.06 (26.9)	1.88 (47.7)	1.57 (40.0)	2.56 (65.0)
-TBH-FT6-5-3W	3/8 Tube	0.19 (4.8)	0.75	4.25 (108)	2.13 (54.0)	1.06 (26.9)	1.88 (47.7)	1.57 (40.0)	2.56 (65.0)
-TBH-FT8-5-3W	1/2 Tube	0.19 (4.8)	0.75	4.60 (116.8)	2.30 (58.4)	1.06 (26.9)	1.88 (47.7)	1.57 (40.0)	2.56 (65.0)
-TBH-MT4-5-3W	6mm Tube	0.19 (4.8)	0.75	4.09 (103.8)	2.04 (51.9)	1.06 (26.9)	1.88 (47.7)	1.57 (40.0)	2.56 (65.0)
-TBH-MT8-5-3W	8mm Tube	0.19 (4.8)	0.75	4.14 (105.2)	2.07 (52.6)	1.06 (26.9)	1.88 (47.7)	1.57 (40.0)	2.56 (65.0)
-TBH-MT10-5-3W	10mm Tube	0.19 (4.8)	0.75	4.25 (108)	2.13 (54.0)	1.06 (26.9)	1.88 (47.7)	1.57 (40.0)	2.56 (65.0)
-TBH-MT12-5-3W	12mm Tube	0.19 (4.8)	0.75	4.60 (116.8)	2.30 (58.4)	1.06 (26.9)	1.88 (47.7)	1.57 (40.0)	2.56 (65.0)

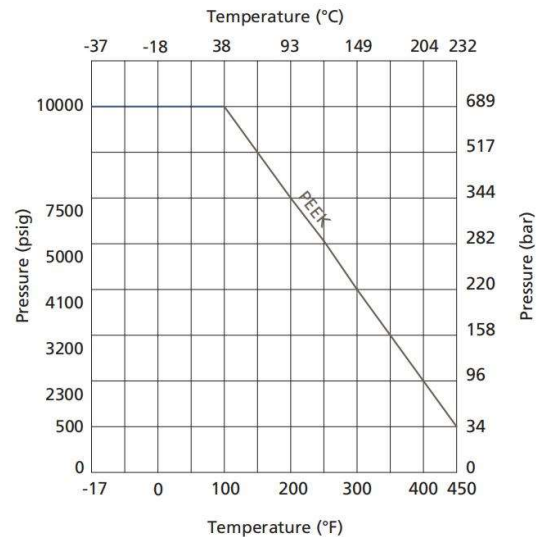
- Sizes and types listed are standard. Other sizes and types are available upon request, refer to the ordering information.
- Dimensions are shown with Beyond Fluid nuts finger-tightened. All dimensions are for reference only and are subject to change.
- For dimensions not shown above, please contact the authorized representative or Beyond Fluid employees.

## Pressure vs. Temperature

TBV Series

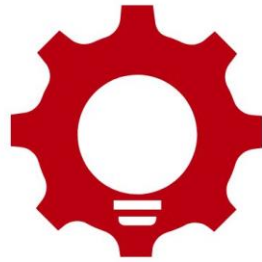


TBVH Series



## TB & TBH Series Seal Kits

- Seal kits contain components of the same material as original valve. See standard material of construction.
- To complete the ordering number, please add SK for seal kits. Example: TBSS-FN4-5-3W-SK



# BEYOND FLUID

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Beyond Fluid

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