One Piece Ball Valves

IBL SERIES

- Maximum Working Pressure : 3,000 psig (206 bar) @ 100°F (37°C)
- Working Temperature Range : 50°F(10°C) to 150°F(65°C)

Every IBL Series ball valve is leak tested at 1,000PSIG before packaging.
And please contact TK-Fujikin or your authorized TK-Fujikin representative if your usage pressure of these valves exceeds 1,000PSIG.

TK-FUJIKIN CORPORATION
Fujikin Corp Group

ORDERING INFORMATION

SS	—	IBL1	A	D	—	4SW	—	BL
1		2	3	4		5		6

1. BODY MATERIAL

Material	Designator
316 SS	SS

2. VALVE SERIES

Orifice Size	Designator
1.3mm, 2.4mm, 3.2mm	IBL1
4.8mm	IBL2
7.1mm	IBL3
10.3mm	IBL4

* The Orifice Size is determined using valves with TKF tube fitting end connections.
* For more details, See the Dimensions Table.

3. BODY PATTERN

Body Pattern	Designator
2-Way Straight (Standard)	Blank
2-Way Angle	A
3-Way	3

4. VENT PORT OPTION

Vent Port Option	Designator
Without	Blank
Downstream Vent	D
Upstream Vent	U

5. INLET/OUTLET CONNECTION SIZE & TYPE

Inlet/Outlet Connection Size	Designator
1/16”	1
1/8”	2
1/4”	4
3/8”	6
1/2”	8
3mm	3M
6mm	6M
8mm	8M
10mm	10M
12mm	12M

Inlet/Outlet Connection Type	Designator
Lok	SW
Male NPT	NM
Female NPT	NF
Male ISO① Tapered	PTM
Female ISO① Tapered	PTF
MFS Male	VM

① Refer to specifications ISO 7/1, BS EN 10226-1, DIN-2999, and JIS B0203.

6. HANDLE TYPE

Handle Type	Designator
Black nylon Handle (Standard)	Blank
Blue nylon Handle	BL
Green nylon Handle	GR
Orange nylon Handle	OG
Red nylon Handle	RD
Yellow nylon Handle	YW
nylon Oval Handle	O
Metal Handle (Stainless Steel Bar)	S
Metal Handle (Aluminum Bar)	A

FEATURES

- Simple design with one piece body
- Tight and smooth, low torque and easy operation
- One - piece ball stem
- Panel mountable
- Variety of End Connections
- Straight, Angle and 3 - Way flow patterns
- Each and every valve is tested at the factory

TECHNICAL DATA

TEMPERATURE - WORKING PRESSURE RATING

Series	Temperature, °F (°C)	Straight Pattern (2-Way)	Angle Pattern (2-Way)	Switching Pattern (3-Way)	Seat Material
IBL1	50 (10) ~ 150 (65)	2,500 psig (172 bar)	2,500 psig (172 bar)	2,500 psig (172 bar)	PTFE
IBL2		3,000 psig (206 bar)	2,500 psig (172 bar)	2,500 psig (172 bar)	
IBL3		2,500 psig (172 bar)	1,500 psig (103 bar)	1,500 psig (103 bar)	
IBL4		2,500 psig (172 bar)	1,500 psig (103 bar)	1,500 psig (103 bar)	

TEMPERATURE - WORKING PRESSURE RATING

Flow Coefficient (Cv)	Pressure Drop Atmosphere (Δp), psi (bar)					
	10 (0.68)	50 (3.4)	100 (6.8)	10 (0.68)	50 (3.4)	100 (6.8)
	Air Flow std ft3 / min (std L / min)			Water Flow U. S. gal / min (std L / min)		
0.05	0.6 (16)	1.5 (42)	2.6 (73)	0.1 (0.3)	0.3 (1.1)	0.5 (1.8)
0.06	0.7 (19)	1.8 (50)	3.2 (90)	0.2 (0.7)	0.4 (1.5)	0.6 (2.2)
0.07	0.8 (22)	2.1 (59)	3.7 (100)	0.2 (0.7)	0.5 (1.8)	0.7 (2.6)
0.08	0.9 (25)	2.4 (67)	4.3 (120)	0.3 (1.1)	0.6 (2.2)	0.8 (3.0)
0.1	1.1 (31)	3.0 (84)	5.3 (150)	0.3 (1.1)	0.7 (2.6)	1.0 (3.7)
0.15	1.7 (48)	4.5 (120)	8.2 (220)	0.4 (1.5)	1.0 (3.7)	1.5 (5.6)
0.2	2.3 (65)	6.0 (160)	11 (310)	0.6 (2.2)	1.4 (5.2)	2.0 (7.5)
0.3	3.4 (96)	9.0 (250)	16 (450)	0.9 (3.4)	2.1 (7.9)	3.0 (11)
0.35	4.0 (110)	10 (280)	19 (530)	1.1 (4.1)	2.4 (9.0)	3.5 (13)
0.5	5.6 (150)	15 (420)	27 (760)	1.6 (6.0)	3.5 (13)	5.0 (18)
0.6	6.8 (190)	18 (500)	32 (900)	1.9 (7.1)	4.2 (15)	6.0 (22)
0.7	7.9 (220)	21 (590)	37 (1,000)	2.2 (8.3)	4.9 (18)	7.0 (26)
0.75	8.5 (240)	22 (620)	40 (1,100)	2.3 (8.7)	5.3 (20)	7.5 (28)
0.8	9.0 (250)	24 (670)	42 (1,100)	2.5 (9.4)	5.6 (21)	8.0 (30)
0.9	10 (280)	27 (760)	48 (1,300)	2.8 (10)	6.4 (24)	9.0 (34)
1.2	14 (390)	36 (1,000)	64 (1,800)	3.8 (14)	8.5 (32)	12 (45)
1.4	16 (450)	42 (1,100)	74 (2,000)	4.4 (16)	9.9 (37)	14 (52)
1.5	17 (480)	45 (1,200)	80 (2,200)	4.7 (17)	11 (41)	15 (56)
1.6	18 (500)	48 (1,300)	85 (2,400)	5.0 (18)	11 (41)	16 (60)
1.7	19 (530)	51 (1,400)	90 (2,500)	5.3 (20)	12 (45)	17 (64)
2	22 (620)	60 (1,600)	100 (2,800)	6.3 (23)	14 (52)	20 (75)
2.4	27 (760)	72 (2,000)	120 (3,300)	7.6 (28)	17 (64)	24 (90)
2.6	29 (820)	78 (2,200)	140 (3,900)	8.2 (31)	18 (68)	26 (98)
3	34 (960)	90 (2,500)	160 (4,500)	9.5 (35)	21 (79)	30 (110)
3.5	39 (1,100)	100 (2,800)	180 (5,000)	11 (41)	25 (94)	35 (130)
3.8	43 (1,200)	110 (3,100)	200 (6,700)	12 (45)	27 (100)	38 (140)
4.6	52 (1,400)	140 (3,900)	240 (6,700)	15 (56)	33 (120)	46 (170)
6	68 (1,900)	180 (5,000)	320 (9,000)	19 (71)	42 (150)	60 (220)
6.3	71 (2,000)	190 (5,300)	330 (9,300)	20 (75)	45 (170)	63 (230)
6.4	72 (2,000)	190 (5,300)	340 (9,600)	20 (75)	45 (170)	64 (240)
12	130 (3,600)	360 (10,000)	640 (18,000)	38 (140)	85 (320)	120 (450)

ONE PIECE BALL VALVES |

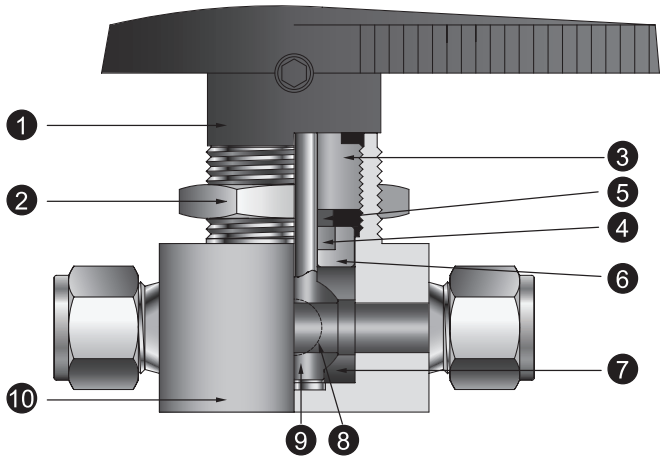
TESTING

For leakage, Each valve is tested with nitrogen at 1,000psig (69bar)
The leakage shall not exceed 0.1 std cc/min (Max. 0.1 std cc/min)

PACKING ADJUSTMENT

Packing is set for 1000psig (69 bar) service in the factory.
For service in pressure higher than test pressure, The packing must be readjusted to prevent leakage.
Before installation, Packing of the valve exposed to environmental conditions may lose initial packing load.
Therefore, packing adjustment may be recommended for service.

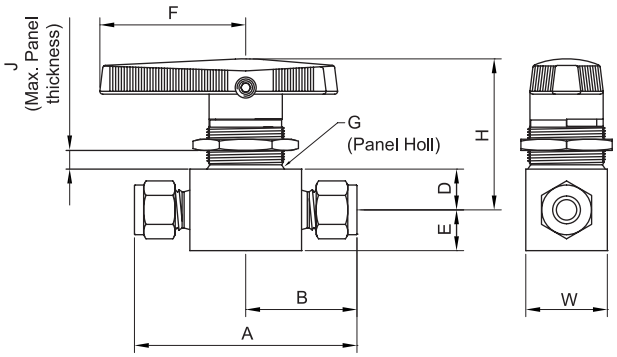
MATERIALS OF CONSTRUCTION



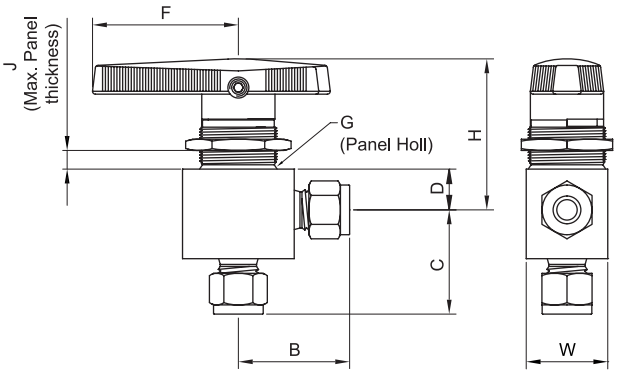
No.	Material Grade / ASTM Specification	
	Description	Material
		Stainless Steel
1	Handle	Nylon6 / ADC6 insert
2	Panel Nut	304 SS / A276
3	Packing Bolt	316 SS / A276
4	Gland Packing	PTFE
5	Packing Ring	316 SS / A276
6	Packing ARM	316 SS / A276
7	Seat1 / Seat2	PTFE
8	Retainer1	316L SS
	Retainer2	
9	Stem	316 SS / A276
10	Body	316 SS / A479

DIMENSIONS

2-WAY VALVE



Straight Pattern



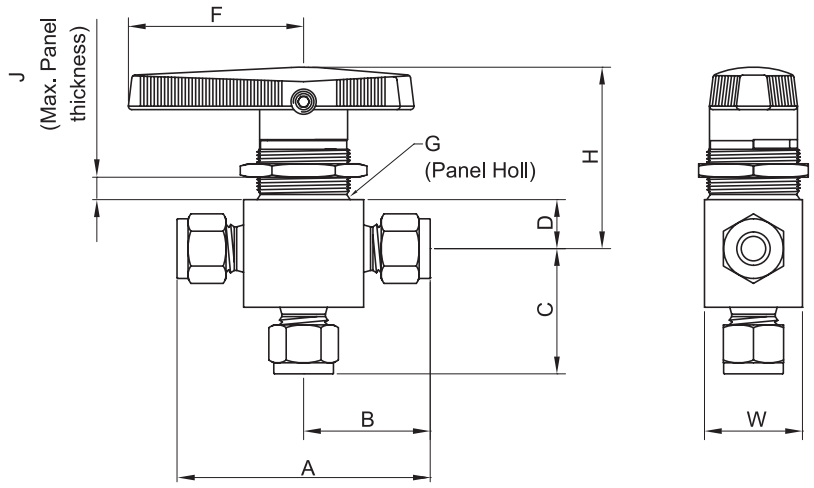
Angle Pattern

Order Number		Orifice in. (mm)	Cv		End Connections		Dimensions in. (mm)								
Series	Part No.		Straight	Angle	Inlet	Outlet	A	B	C	D	E	F	G	J	H	W
IBL1	1SW	0.051 (1.3)	0.1	-	1/16" T-LOK		1.68 (42.7)	0.84 (21.3)	-	0.34 (8.6)	0.28 (7.1)	1.12 (28.4)	0.59 (15.1)	0.25 (6.4)	1.37 (34.7)	0.58 (14.7)
	2SW	0.094 (2.4)	0.2	0.15	1/8" T-LOK		2.01 (51.1)	1.00 (25.5)	0.97 (24.6)							
	3M SW		0.2	0.15	3mm T-LOK											
	4SW	0.126 (3.2)	0.6	0.35	1/4" T-LOK		2.21 (56.1)	1.10 (27.9)	1.07 (27.2)							
	6M SW		0.6	0.35	6mm T-LOK											
	2NF		0.5	0.3	1/8" Female NPT		1.63 (41.4)	0.81 (20.7)	0.81 (20.6)							
IBL2	4SW	0.189 (4.80)	1.4	0.9	1/4" T-LOK		2.36 (59.9)	1.18 (30)	1.17 (29.7)	0.44 (11.2)	0.38 (9.7)	1.53 (38.9)	0.78 (19.8)	0.19 (4.8)	1.56 (39.6)	0.78 (19.8)
	6SW		1.5	0.9	3/8" T-LOK		2.58 (65.5)	1.29 (32.8)	1.29 (32.8)							
	6M SW		1.4	0.9	6mm T-LOK		2.39 (60.7)	1.20 (30.5)	1.17 (29.7)							
	8M SW		1.5	0.9	8mm T-LOK		2.46 (62.5)	1.23 (31.2)	1.20 (30.5)							
	2NF		1.2	0.7	1/8" Female NPT		2.00 (50.8)	1.00 (26.2)	1.00 (25.4)							
	4NF		0.9	0.75	1/4" Female NPT		2.06 (52.3)	1.03 (26.2)	1.03 (26.2)							
	4PTF		0.9	-	1/4" Female ISO①		2.06 (52.3)		-							
	4NM		1.2	0.75	1/4" Male NPT		2.00 (50.8)	1.00 (25.4)	1.03 (26.2)							
	4NM	4SW	1.6	0.75	1/4" Male NPT	1/4" T-LOK	2.20 (55.9)	1.17 (29.8)								
IBL3	6SW	0.280 (7.1)	6	2	3/8" T-LOK		3.05 (77.5)	1.52 (38.7)	1.43 (36.3)	0.56 (14.2)	0.56 (14.2)	2.00 (50.8)	1.13 (28.6)	0.37 (9.5)	2.07 (52.6)	1.12 (28.4)
	10M SW		6	2	10mm T-LOK		3.07 (78.0)	1.54 (39.0)								
	4NF		3	1.7	1/4" Female NPT		2.5 (63.5)	1.25 (31.8) -	1.25 (31.8)							
	6NF		2.6	1.5	3/8" Female NPT											
	6PTF		2.6	-	3/8" Female ISO①											
IBL4	8SW	0.406 (10.3)	12	4.6	1/2" T-LOK		3.92 (99.6)	1.96 (49.8)	1.74 (44.2)	0.69 (17.5)	0.69 (17.5)	3.00 (76.2)	1.5 (38.1)		2.43 (61.7)	1.50 (38.1)
	12SW		6.4	3.8	3/4" T-LOK											
	12M SW		12	4.6	12mm T-LOK											
	8NF		6.3	3.5	1/2" Female NPT		3.12 (79.2)	1.56 (39.6)	1.56 (39.6)							
	8PTF		6.3	-	1/2" Female ISO①			-								

① Refer to specifications ISO 7/1, BS EN 10226-1, DIN-2999, and JIS B0203.

ONE PIECE BALL VALVES |

3-WAY VALVE



Order Number		Orifice in. (mm)	Cv	End Connections		Dimensions in. (mm)								
Series	Part No.			Inlet	Outlet	A	B	C	D	F	G	J	H	W
IBL1	1SW	0.051 (1.3)	0.08	1/16" T-LOK		1.68 (42.7)	0.84 (21.3)	0.81 (20.6)	0.34 (8.6)	1.12 (28.4)	0.59 (15.1)	0.25 (6.4)	1.37 (34.7)	0.58 (14.7)
	2SW	0.094 (2.4)	0.15	1/8" T-LOK		2.01 (51.1)	1.00 (25.5)	0.97 (24.6)						
	3M SW		0.15	3mm T-LOK										
	4SW	0.126 (3.2)	0.35	1/4" T-LOK		2.21 (56.1)	1.10 (27.9)	1.07 (27.2)						
	6M SW		0.35	6mm T-LOK										
	2NF		0.3	1/8" Female NPT		1.63 (41.4)	0.81 (20.7)	0.81 (20.6)						
IBL2	4SW	0.189 (4.80)	0.9	1/4" T-LOK		2.36 (59.9)	1.18 (30)	1.17 (29.7)	0.44 (11.2)	1.53 (38.9)	0.78 (19.8)	0.19 (4.8)	1.56 (39.6)	0.78 (19.8)
	6M SW		0.9	6mm T-LOK		0.39 (60.7)	1.20 (30.5)							
	8M SW		0.8	8mm T-LOK		2.46 (62.5)	1.23 (31.2)	1.20 (30.5)						
	4NF		0.75	1/4" Female NPT		2.06 (52.3)	1.03 (26.2)	1.03 (26.2)						
	4PTF		0.75	1/4" Female ISO①										
	4SW 4NM		0.8	1/4" Male NPT	1/4" T-LOK	2.2 (55.9)	1.17 (29.8)							
IBL3	6SW	0.280 (7.1)	2	3/8" T-LOK		2.89 (73.4)	1.43 (36.6)	1.43 (36.3)	0.56 (14.2)	2.00 (50.8)	1.13 (28.6)	0.37 (9.5)	2.07 (52.6)	1.12 (28.4)
	10M SW		2	10mm T-LOK		3.07 (78.0)	1.25 (31.8)							
	4NF		1.7	1/4" Female NPT		2.50 (63.5)	1.25 (31.8)	1.25 (31.8)						
	6NF		1.5	3/8" Female NPT										
	8PTF		1.5	3/8" Female ISO①										
IBL4	8SW	0.406 (10.3)	4.6	1/2" T-LOK		3.48 (88.4)	1.74 (44.2)	1.74 (44.2)	0.69 (17.5)	3.00 (76.2)	1.5 (38.1)		2.43 (61.7)	1.50 (38.1)
	12SW		3.8	3/4" T-LOK										
	12M SW		4.6	12mm T-LOK										
	8NF		3.5	1/2" Female NPT		3.12 (79.2)	1.56 (39.6)	1.56 (39.6)						

① Refer to specifications ISO 7/1, BS EN 10226-1, DIN-2999, and JIS B0203.