

Valves

BALL VALVE



NEEDLE VALVE

67

VALVE MANIFOLDS

81

BALL VALVE

90

CHECK VALVE

104

BV SERIES BALL VALVE

FEATURES

1. On/off service ball valve with 2-way pattern and diverter service ball valve with 3-way pattern.
2. MAWP 6000psi (410Bar) and MAWT 400°F (204°C)
3. Material is available in 316 Stainless Steel, Brass.
4. The floating ball design to provide seat wear compensation and ensure leak proof shut off on pressure.
5. Bi-directional flow.
6. Micro-finished ball provides a positive seal.
7. Wide range of end connection, available with LOCK-FIT tube end, NPT or BSP / ISO taper thread in male and female end.
8. Handle indicates flow direction and color code handles.
9. Panel mountable.
10. 100% factory tested. Each valves is 100% tested with nitrogen at 1000psi(69 bar) for leakage at the seat and stem packing or hydrostatic shell test in performed at 1.5 times the working pressure.

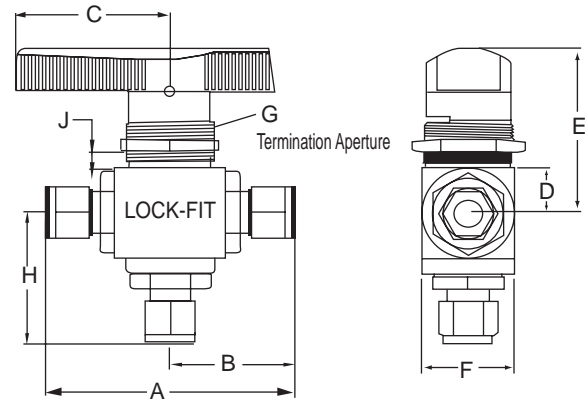
Material of Construction

(Example)

No.	Name	SS Valve	CS Valve
1	Handle	Black Nylon And Metal	
2	Set Screw	SS 304	SS 304
3	Lock Nut	SS 316	Brass
4	Pad Lock Nut	SS 316	Brass
5	Dust Cap	NBR	NBR
6	Stem Pad	PTFE	PTFE
7	Stem	SS 316	Brass
8	Ball	SS 316	SS 316
9	Ball Pad	PTFE	PTFE
10	End Fitting	SS 316	Brass
11	Body	SS 316	Brass

BV3W 3 WAY PORT BALL VALVE

MODEL AND DIMENSION

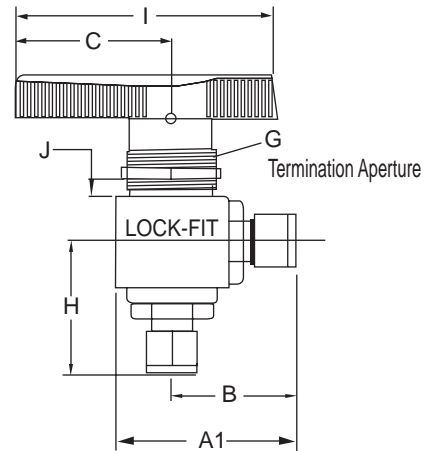


Model No.	Termination Aperture	Dimensions										
		A	A1	B	C	D	E	F	G	H	I	J
BV3W-03OD	3mm											
BV3W-01OD	1/8"	62		31			37	22	14	31	51	5
BV3W-4OD	4mm											
BV3W-6OD	6mm											
BV3W-02OD	1/4"	65		32.5	32	10				32.5		
BV3W-8OD	8mm	68.5		34						34		
BV3W-03OD	3/8"	70.5		35.3						35.3		
BV3W-10OD	10mm	78.5		39						39		
BV3W-12OD	12mm	84		42	41	15	46	28	19	42	66.5	
BV3W-04OD	1/2"											
BV3W-01M/F	1/8"	47		23.5	32	10	37	22	14		51	
BV3W-02M/F	1/4"	54		27								
BV3W-03M/F	3/8"			27	41	15	46	28	19		66.5	
BV3W-04M-F	1/2"	70		35								

All dimensions are in millimeters unless otherwise specified, only for reference subject to change.

BVL ANGLE TYPE BALL VALVE

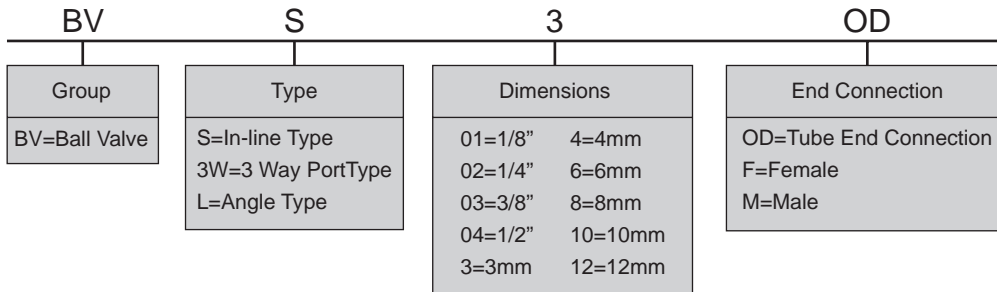
MODEL AND DIMENSION



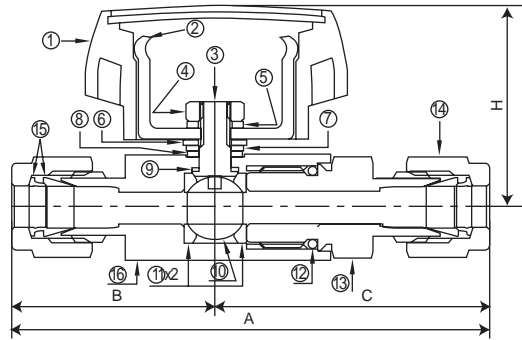
Model No.	Termination Aperture	Dimensions										
		A	A1	B	C	D	E	F	G	H	I	J
BVL-3OD	3mm											
BVL-01OD	1/8"	62	41	31						31		
BVL-4OD	4mm											
BVL-6OD	6mm											
BVL-02OD	1/4"	65	42	32.5	32	10	10	37	22	32.5	51	
BVL-8OD	8mm	68.5	44	34.5								
BVL-03OD	3/8"	70.5										
BVL-10OD	10mm	78.5	52	39						39	66.5	
BVL-12OD	12mm				41	15	46	28	29	42		
BVL-04OD	1/2"	84	54	42								
BVL-01M/F	1/8"	47	33	23.5	32	10	37	22	14		51	
BVL-02M/F	1/4"		37	27								
BVL-03M/F	3/8"	54	37	27								
BVL-04M/F	1/2"	70	48	35	41	15	46	28	19		66.5	

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ORDERING INFORMATION



BVJ MIDDLE AND LOW PRESSURE BALL VALVE



No.	Name	Material
1	Handle	Nylon
2	Bracket	SS304
3	Mandrel	SS316
4	Nut	304
5	Washer	304
6	Sealing	DELTRIN
7	Sealing	DELTRIN
8	Sealing	PTFE
9	Sealing	PTFE
10	Ball Core	316
11	Side Packing	PTFE
12	Ring	Viton
13	Body	SS316
14	Nut	SS316
15	Ferrule	SS316
16	Seat	SS316

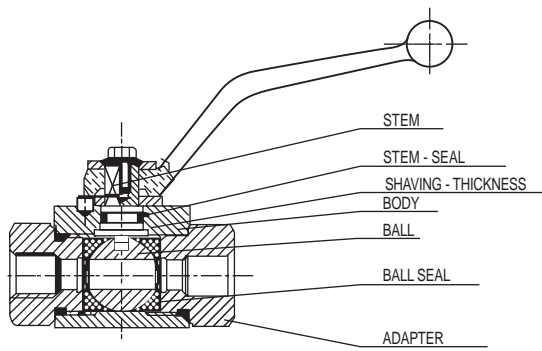
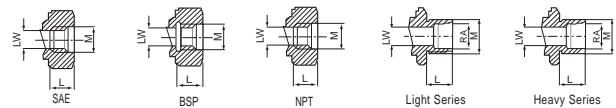
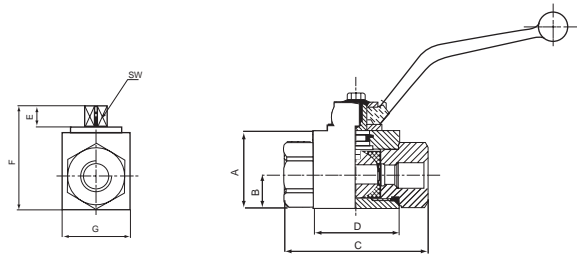
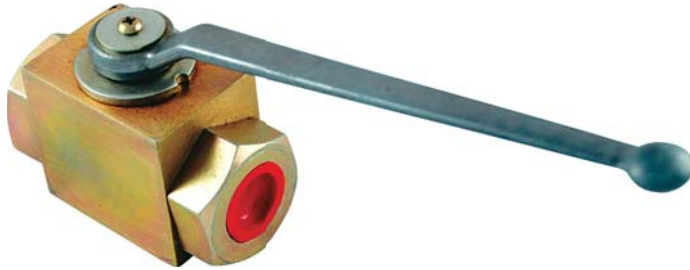
Model No.	Size	Dimensions				
		A	B	C	D	H
BVJ-6OD	6mm	73.5	32	41.5	17	30.5
BVJ-02OD	1/4"	73.5	32			
BVJ-8OD	8mm	76.5	33			
BVJ-03OD	3/8"	78	34	50	19	31.5
BVJ-10OD	10mm	78	34			
BVJ-12OD	12mm	91	42	41.5	27	42.5
BVJ-04OD	1/2"	91	42			
BVJ-02F	1/4"	60	26	50	17	30.5
BVJ-03F	3/8"	64	28			
BVJ-04F	1/2"	76	33	41.5	22	33
BVJ-02F-02M	1/4"	60	26			
BVJ-03F-03M	3/8"	64	28	50	27	42.5
BVJ-04F-04M	1/2"	86	41			
BVJ-02F-6OD	1/4"	66	26	41.5	17	30.5
BVJ-02F-02OD	1/4"	66	26			
BVJ-02F-8OD	1/4"	67	26			
BVJ-03F-10OD	3/8"	71	28	50	22	33
BVJ-03F-03OD	3/8"	71	28			
BVJ-04F-12OD	1/2"	78	41	41.5	27	42.5
BVJ-04F-04OD	1/2"	78	41			
BVJ-06OD	3/4"	96	45	51	38	47
BVJ-08OD	1"	100	47			

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ORDERING INFORMATION

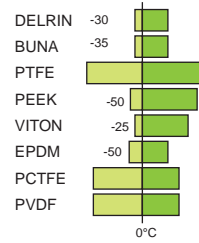
BVJ	02	F	02	OD
Group	Size	End Connection Type	Size	End Connection Type
BVJ=Middle And Low Pressure Ball Valve	02=1/4" 6=6mm 03=3/8" 8=8mm 04=1/2" 10=10mm 06=3/4" 12=12mm 08=1"	OD=Tube End Type F=(Inlet) Female M=(Inlet) Male	02=1/4" 6=6mm 03=3/8" 8=8mm 04=1/2" 10=10mm 06=3/4" 12=12mm 08=1"	OD=Tube End Connection F=(Outlet) Female M=(Outlet) Male

LFBV HIGH PRESSURE FULL PORT BALL VALVE



MAXIMUM AND MINIMUM
ADMISSIBLE WORKING
TEMPERATURES FOR
SEAL MATERIAL

TEMPERATURE
MASSIME E MINIME AMMISSIBILI
DELLE GUARNIZIONI



MATERIAL CLASSIFICATION				
N.	DIN	W.Nr	AIISI	ASTM
1	9 SMnPb 36	1.0737	1214	
2	St 52-3	1.057		A105
3	X10 CrNi5 18 9	1.4305	303	
4	X2 CrNiMo 17 13 2	1.4404	316 L	
5	X20 Cr 13	1.4021	420	
6	X5 CrNi 18 10	1.4301	304	

SEAL CLASSIFICATION	
A	DELIRIN
B	BUNA
C	PTFE
D	PEEK
E	VITON
F	EPDM
G	PVDF
K	PTFE with a metallic insert
H	PCTFE
I	PTFE-C-657

Female/GAS DIN/ISO 228 BSP

TYPE	PN MAN	DN	A	B	C	D	E	F	G	H	L	M	SW	LW	Kg
LFBV-01G	500	4	35	14	71	42	11	49	30	110	11	G 1/8	9	4	0.5
LFBV-02G	500	6	35	14	71	42	11	49	30	110	16	G 1/4	9	6	0.5
LFBV-03G	500	10	40	17	73	44	11	54	35	110	16	G 3/8	9	10	0.65
LFBV-04G	500	13	43	18	83	48	11	57	37	110	17	G 1/2	9	10	0.75
LFBV-06G	400	20	55	23	95	62	13	73	45	180	21	G 3/4	14	20	1.4
LFBV-08G	350	25	65	29	113	66	13	83	55	180	24	G 1"	14	25	2.15
LFBV-10G	350	25	65	29	121	66	13	83	55	180	24	G 1-1/4"	14	25	2.25
LFBV-12G	350	25	65	29	124	66	13	83	55	180	24	G 1-1/2"	14	25	2.35

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Female NPT/PT ANSI B 1.20.1

TYPE	PN (SAR)	DN	A	B	C	D	E	F	G	H	L	M	SW	LW	kg
LFBV-04N	7250	4	35	14	71	42	11	49	30	110	11	N1/8	9	4	0.5
LFBV-02N	7250	6	35	14	71	42	11	49	30	110	16	N1/4	9	6	0.5
LFBV-03N	7250	10	40	17	73	44	11	54	35	110	16	N3/8	9	10	0.65
LFBV-04N	7250	13	43	18	83	48	11	57	37	110	17	N1/2	9	13	0.75
LFBV-06N	5800	20	55	23	95	62	13	73	45	180	21	N3/4	14	20	1.4
LFBV-08N	5075	25	65	29	113	66	13	83	55	180	24	N1"	14	25	2.15
LFBV-10N	5075	25	65	29	121	66	13	83	55	180	24	N1-1/4"	14	25	2.25
LFBV-12N	5075	25	65	29	124	66	13	83	55	180	24	N1-1/2"	14	25	2.35

DIN 2353 Light Series

TYPE	PN (SAR)	DN	A	B	C	D	E	F	G	H	L	M	SW	RA	kg
LFBV-6L	500	6	35	14	76	42	11	49	30	110	10	12x1.5	9	6	0.5
LFBV-8L	500	6	35	14	76	42	11	49	30	110	10	14x1.5	9	8	0.5
LFBV-10L	500	6	35	14	76	42	11	49	30	110	11	16x1.5	9	10	0.5
LFBV-10L-1	500	10	40	17	76	44	11	54	35	110	11	16x1.5	9	10	0.65
LFBV-12L	500	10	40	17	77	44	11	54	35	110	11	18x1.5	9	12	0.65
LFBV-15L	500	13	43	18	86	48	11	57	37	110	12	22x1.5	9	15	0.75
LFBV-18L	500	13	43	18	86	48	11	57	37	110	12	26x1.5	9	18	0.75
LFBV-22L	400	20	55	23	108	62	13	73	45	180	14	30x2	14	22	1.4
LFBV-28L	350	25	65	29	115	66	13	83	55	180	14	36x2	14	28	2.15
LFBV-35L	350	25	65	29	115	66	13	83	55	180	16	45x2	14	35	2.15
LFBV-42L	350	25	65	29	115	66	13	83	55	180	16	52x2	14	42	2.15

DIN 2353 Heavy Series

TYPE	PN (SAR)	DN	A	B	C	D	E	F	G	H	L	M	SW	RA	kg
LFBV-8H	500	4	35	14	76	42	11	49	30	110	12	16x1.5	9	8	0.5
LFBV-10H	500	6	35	14	76	42	11	49	30	110	12	18x1.5	9	10	0.5
LFBV-12H	500	8	35	14	76	42	11	49	30	110	12	20x1.5	9	12	0.5
LFBV-12H-1	500	10	40	17	76	44	11	54	35	110	12	20x1.5	9	12	0.65
LFBV-14H	500	10	40	17	82	44	11	54	35	110	14	22x1.5	9	14	0.65
LFBV-16H	500	13	43	18	89	48	11	57	37	110	14	24x1.5	9	16	0.75
LFBV-20H	500	13	43	18	93	48	11	57	37	110	16	30x2	9	20	0.75
LFBV-25H	400	20	55	23	111	62	13	73	45	180	18	36x2	14	25	1.4
LFBV-30H	350	25	65	29	125	66	13	83	55	180	20	42x2	14	30	2.15
LFBV-38H	350	25	65	29	132	66	13	83	55	180	22	52x2	14	38	2.15

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ORDERING INFORMATION

LFBV	01	G	S	Option
Group	Thread Size	Type	Material	Connection Selection
LFBV= High Pressure Full Port Ball Valve	01G(N)=1/8" 02G(N)=1/4" 03G(N)=3/8" 04G(N)=1/2" 06G(N)=3/4" 08G(N)=1" 10G(N)=1-1/4" 12G(N)=1-1/2" 6L(H)=RA6 8L(H)=RA8 10L(H)=RA10 12L(H)=RA12 14L(H)=RA14 15L(H)=RA15 16L(H)=RA16 20L(H)=RA20 22L(H)=RA22 25L(H)=RA25 28L(H)=RA28 30L(H)=RA30 35L(H)=RA35 42L(H)=RA42	G=Female/GAS DIN/ISO 228 BSP N=Female NPT/PT ANSI B 1.20.1 L=DIN 2353 Light Series H=DIN 2353 Heavy Series	S=Stainless Steel C=Carbon Steel	G=G Thread PT=PT Thread NPT=NPT Thread

INBV TOP-LOADED DESIGN ONE PIECE BALL VALVE

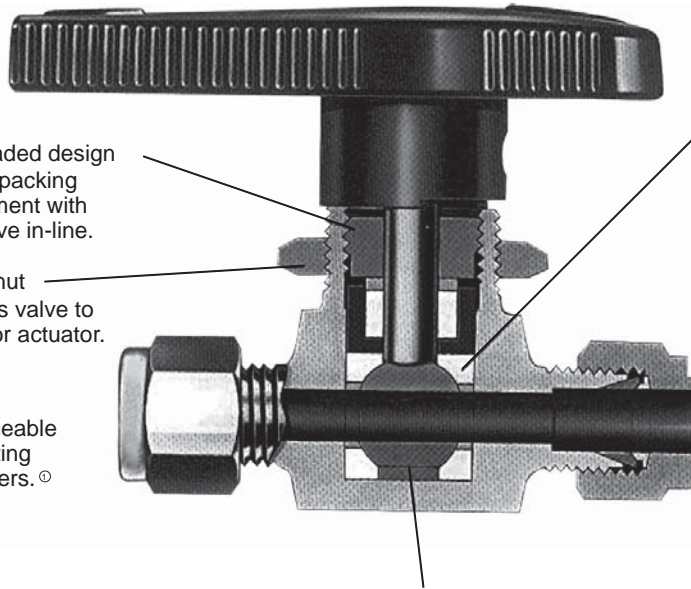
Specification of Construction

Directional Handle indicates position of orifice.

Top-loaded design allows packing adjustment with the valve in-line.

Panel nut secures valve to panel or actuator.

End Connections are available in gageable LOCK-FIT tube fitting and a variety of others. ©

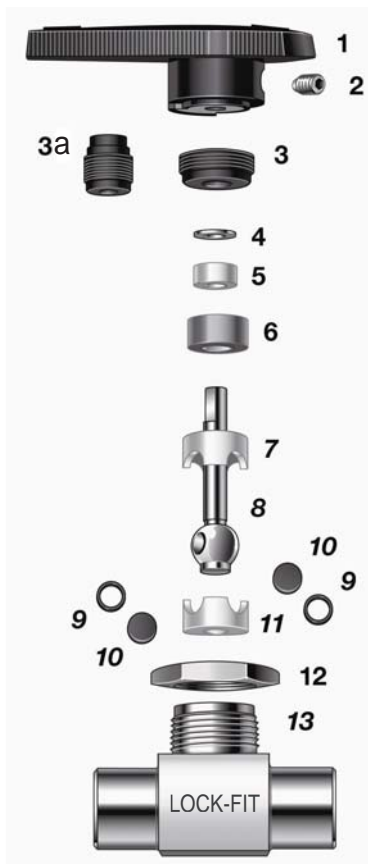


Capsule seat packing

- does not require system pressure to make a seal
- allows bi-directional flow
- has virtually no dead space
- is easily cleaned or purged
- is available in optional materials for system compatibility.

One-piece body eliminates multiple-seal points.

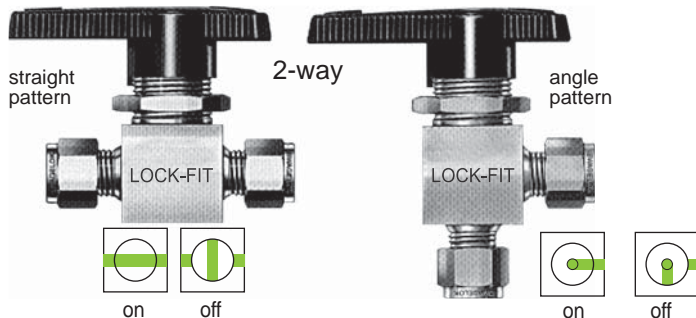
One-piece ball stem eliminates backlash to ensure alignment of ball and orifice.



Materials of Construction

Components	Valve Body Materials	
	Stainless steel	Brass
	Grade/ASTM Specification	
1 Handle	nylon (brass insert)	
2 Set screw	17-4PH/A564	
3 Packing bolt	316SS	Brass
3a Packing bolt		
4 Upper gland	316SS	Brass
		316SS
5 Bushing	PTFE	
6 Lower gland	316SS	Brass
7 Upper packing	PTFE	
8 Ball stem	316SS	Brass
9 Side rings	316SS (fluorocarbon coating)	Brass (fluorocarbon coating)
10 Side discs		
11 Lower packing	PTFE	
12 Panel nut	316SS	Brass
13 Body	316SS	

On-off valves

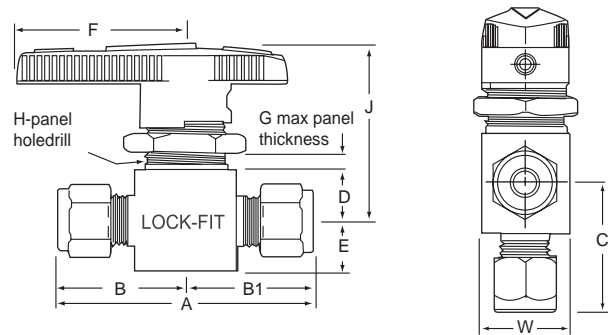


Flow Data

C _v	Air Flow std ft ³ /min at 70°F (21°C)				Water Flow U.S. gal/min at 70°F (21°C)			
	Pressure Drop to Atmosphere (Δp) psi							
	10	50	100	10	50	100		
0.10	1.1	3.0	5.3	0.3	0.7	1.0		
0.20	2.3	6.0	11.0	0.6	1.4	2.0		
0.50	5.6	15.0	27.0	1.6	3.5	5.0		
0.60	6.8	18.0	32.0	1.9	4.2	6.0		
0.90	10.0	27.0	48.0	2.8	6.4	9.0		
1.2	14.0	36.0	64.0	3.8	8.5	12.0		
1.5	17.0	45.0	80.0	4.7	11.0	15.0		
1.6	18.0	48.0	85.0	5.0	11.0	16.0		
2.4	27.0	72.0	120.0	7.6	17.0	24.0		
2.6	29.0	78.0	140.0	8.2	18.0	26.0		
3.0	34.0	90.0	160.0	9.5	21.0	30.6		
6.0	68.0	180.0	320.0	19.0	42.0	60.0		
6.3	71.0	190.0	330.0	20.0	45.0	63.0		
6.4	72.0		340.0			64.0		
12.0	130.0	360.0	640.0	38.0	85.0	120.0		

Technical Data

Valve Series	Pressure Rating		Temperature Range
	psig	bar	
1/16-3/8OD 1/8M/F-1/4M/F	2500	172	50° to 150°F (10° to 65°C)
1/2OD-3/4OD 3/8M/F-1/2M/F	1500	103	

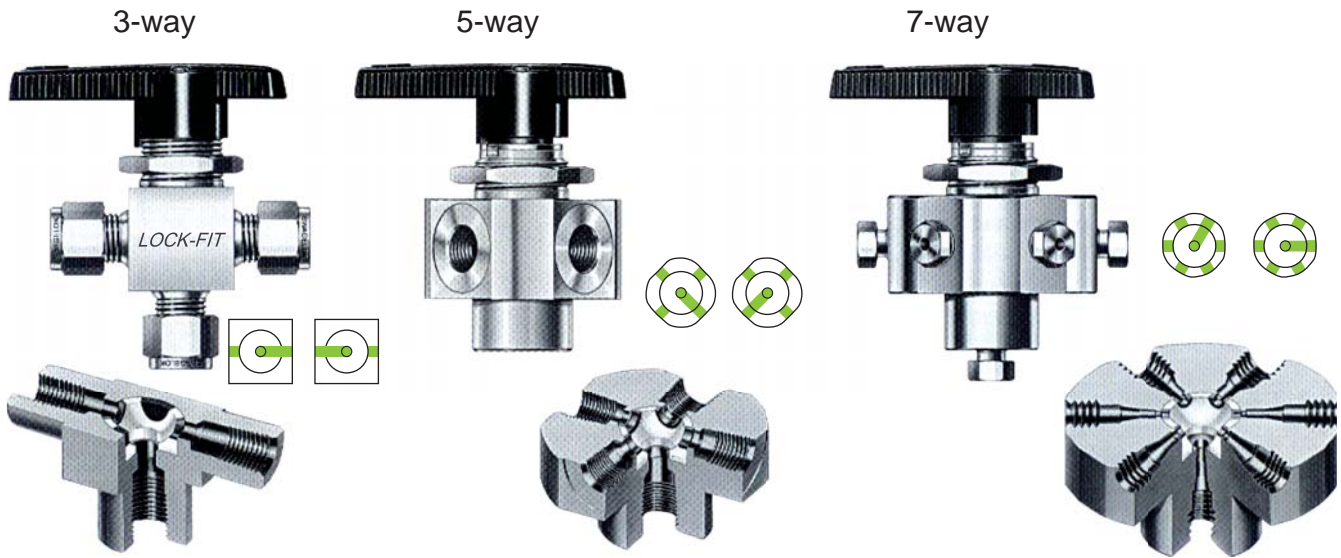


Dimensions

End Connection		Basic Ordering Number	C _v	C _v Angle	Orifice		Inches (mm)										
Type	Size				in.	mm	A	B	B1	C ^②	D	E	F	G ^③	H	J	W
Fractional LOCK-FIT tube fitting	1/16	INBV2W-1/16OD	0.1	—	0.052	1.3	1.68 (42.7)	0.84 (21.3)	0.84 (21.3)	—							
	1/8	INBV2W-01OD	0.2	0.15	0.093	2.4	2.01 (51.1)	1.01 (25.7)	1.01 (25.7)	0.97 (24.6)	0.34 (8.6)	0.28 (7.1)	1.12 (28.4)	1/4 (6.4)	19/32 (15.1)	1.36 (34.5)	0.58 (14.7)
	1/4	INBV2W-02OD	2.4	0.90	0.187	4.8	2.36 (59.9)	1.18 (30.0)	1.18 (30.0)	1.17 (29.7)	0.44 (11.2)	0.38 (9.7)	1.53 (38.9)	3/16 (4.8)	25/32 (19.8)	1.56 (39.6)	0.78 (19.8)
	3/8	INBV2W-03OD	6.0	2.0	0.281	7.1	3.05 (77.5)	1.52 (38.6)	1.52 (38.6)	1.43 (36.3)	0.56 (14.2)	0.56 (14.2)	2.00 (50.8)	3/8 (9.5)	1 1/8 (28.6)	2.07 (52.6)	1.12 (28.4)
	1/2	INBV2W-04OD	12.0	4.6	0.406	10.3	3.92 (99.6)	1.96 (49.8)	1.96 (49.8)	1.74 (44.2)	0.69 (17.5)	0.69 (17.5)	3.00 (76.2)		1 1/2 (38.1)	2.43 (61.7)	1.50 (38.1)
	3/4	INBV2W-06OD	6.4	3.8			3.92 (99.6)	1.96 (49.8)	1.96 (49.8)	1.74 (44.2)	0.69 (17.5)	0.69 (17.5)	3.00 (76.2)	3/8 (9.5)	1 1/2 (38.1)	2.43 (61.7)	1.50 (38.1)
Metric LOCK-FIT tube fitting	3 mm	INBV2W-3OD	0.2	0.15	0.093	2.4	2.01 (51.1)	1.01 (25.7)	1.01 (25.7)	0.97 (24.6)	0.34 (8.6)	0.28 (7.1)	1.12 (28.4)	1/4 (6.4)	19/32 (15.1)	1.36 (34.5)	0.58 (14.7)
	6 mm	INBV2W-6OD	2.4	0.90	0.187	4.8	2.39 (60.7)	1.20 (30.5)	1.20 (30.5)	1.17 (29.7)	0.44 (11.2)	0.38 (9.7)	1.53 (38.9)	3/16 (4.8)	25/32 (19.8)	1.56 (39.6)	0.78 (19.8)
	8 mm	INBV2W-8OD	1.5	0.90			2.46 (62.5)	1.23 (31.2)	1.23 (31.2)	1.20 (30.5)	1.43 (36.3)	0.56 (14.2)	0.56 (14.2)	2.00 (50.8)	3/8 (9.5)	1 1/8 (28.6)	2.07 (52.6)
	10 mm	INBV2W-10OD	6.0	2.0	0.281	7.1	3.07 (78.0)	1.53 (38.9)	1.53 (38.9)	1.43 (36.3)	0.56 (14.2)	0.56 (14.2)	2.00 (50.8)	1 1/8 (28.6)		2.07 (52.6)	1.12 (28.4)
	12 mm	INBV2W-12OD	12.0	4.6	0.375	9.5	3.92 (99.6)	1.96 (49.8)	1.96 (49.8)	1.74 (44.2)	0.69 (17.5)	0.69 (17.5)	3.00 (76.2)	3/8 (9.5)	1 1/2 (38.1)	2.43 (61.7)	1.50 (38.1)
Female NPT/PT	1/8	INBV2W-01F	1.2		0.187	4.8	2.00 (50.8)	1.00 (25.4)	1.00 (25.4)	1.00 (25.4)	0.44 (11.2)	0.38 (9.7)	1.53 (38.9)	3/16 (4.8)	25/32 (19.8)	1.56 (39.6)	0.78 (19.8)
	1/4	INBV2W-02F	3.0	1.7	0.281	7.1	2.50 (63.5)	1.25 (31.8)	1.25 (31.8)	1.25 (31.8)	0.56 (14.2)	0.56 (14.2)	2.00 (50.8)	3/8 (9.5)	1 1/8 (28.6)	2.07 (52.6)	1.12 (28.4)
	3/8	INBV2W-03F	2.6	1.5			3.12 (79.2)	1.56 (39.6)	1.56 (39.6)	1.56 (39.6)	1.56 (39.6)	0.69 (17.5)	0.69 (17.5)		3.00 (76.2)	1 1/2 (38.1)	2.43 (61.7)
1/2	INBV2W-04F	6.3	3.5	0.486	10.3	3.12 (79.2)	1.56 (39.6)	1.56 (39.6)	1.56 (39.6)	0.69 (17.5)	0.69 (17.5)	3.00 (76.2)	3/8 (9.5)	1 1/2 (38.1)	2.43 (61.7)	1.50 (38.1)	
Male NPT	1/4	INBV2W-02M	1.2	0.75	0.187	4.8	2.00 (50.8)	1.00 (25.4)	1.00 (25.4)	1.03 (26.2)	0.44 (11.2)	0.38 (9.7)	1.53 (38.9)	3/16 (4.8)	25/32 (19.8)	1.56 (39.6)	0.78 (19.8)
Male NPT to LOCK-FIT tube fitting	1/4 to 1/4	INBV2W-02OD-02M	1.6	0.75	0.187	4.8	2.20 (55.9)	1.00 (25.4)	1.20 (30.5)	1.03 (26.2)	0.44 (11.2)	0.38 (9.7)	1.53 (38.9)	3/16 (4.8)	25/32 (19.8)	1.56 (39.6)	0.78 (19.8)

All dimensions are in millimeters unless otherwise specified, only for reference subject to change.

Switching Valves



Features

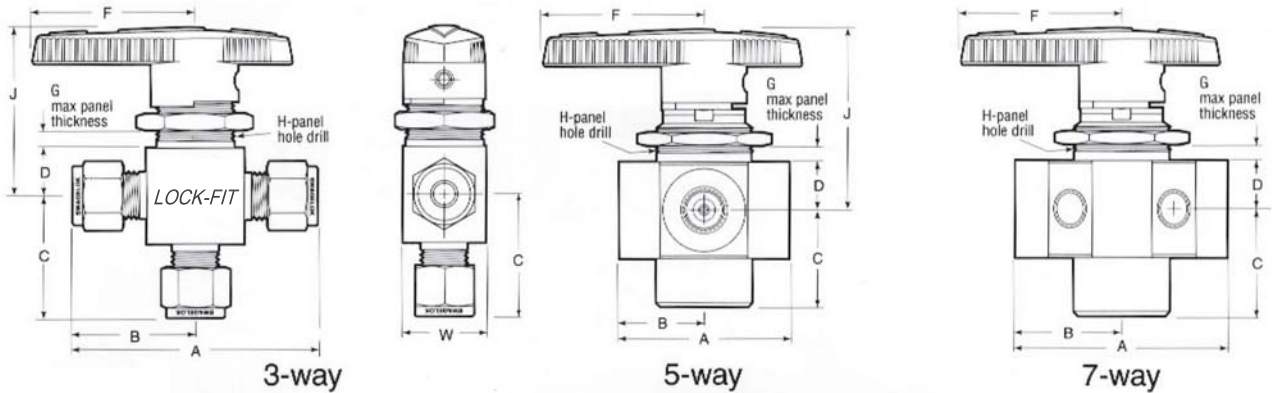
- Unique, top-loaded capsule packing allows reliable switching.
- Flow can be switched from a single inlet to multiple outlets or from multiple inlets to a common outlet.
- 3-way valve has a center-off position.
- 5- and 7-way series valves have a spring-loaded detent for exact port positioning.

Flow Data

Cv	Air Flow sd ft ³ /min at 70°F (21°C)			Water Flow U.S. gal/min at 70°F (21°C)		
	Pressure Drop to Atmosphere (Δp) psig					
	10	50	100	10	50	100
3-way						
0.08	0.9	2.4	4.3	0.3	0.6	0.8
0.15	1.7	4.5	8.0	0.4	1.0	1.5
0.30	3.4	9.0	16.0	0.9	2.1	3.0
0.35	4.0	10.0	19.0	1.1	2.4	3.5
0.75	8.5	22.0	40.0	2.3	5.3	7.5
0.80	9.0	24.0	42.0	2.5	5.6	8.0
0.90	10.0	27.0	48.0	2.8	6.3	9.0
1.5	17.0	45.0	80.0	4.7	11.0	15.0
1.7	19.0	51.0	90.0	5.3	12.0	17.0
2.0	22.0	60.0	100.0	6.3	14.0	20.0
3.5	39.0	100.0	180.0	11.0	25.0	35.0
3.8	43.0	110.0	200.0	12.0	27.0	38.0
4.6	52.0	140.0	240.0	15.0	33.0	46.0
5-way						
0.07	0.8	2.1	3.7	0.2	0.5	0.7
3.5	39.0	100.0	180.0	11.0	25.0	35.0
7-way						
0.05	0.6	1.5	2.6	0.1	0.3	0.5
0.07	0.8	2.1	3.7	0.2	0.5	0.7

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Dimensions



End Connection		Basic Ordering Number	C _v	Orifice		Inches (mm)								
Type	Size			in.	mm	A	B	C	D	F	G [⊖]	H	J	W
3-way														
Fractional LOCK-FIT [®] tube fitting	1/16	INBV3W-1/16OD	0.08	0.052	1.3	1.68 (42.7)	0.84 (21.3)	0.81 (20.6)	0.34 (8.6)	1.13 (28.7)	1/4 (6.4)	19/32 (15.0)	1.36 (34.5)	0.58 (14.7)
	1/8	INBV3W-01OD	0.15	0.093	2.4	2.01 (51.1)	1.01 (25.7)	0.97 (24.6)						
	1/4	INBV3W-02OD	0.90	0.187	4.8	2.39 (60.7)	1.20 (30.5)	1.17 (29.7)	0.44 (11.2)	1.53 (38.9)	3/8 (9.7)	25/32 (19.8)	1.56 (39.6)	0.78 (19.8)
	3/8	INBV3W-03OD	2.0	0.281	7.1	2.89 (73.4)	1.45 (36.8)	1.43 (36.3)	0.56 (14.2)	2.00 (50.8)		1 1/3 (28.7)	2.07 (52.6)	1.12 (28.4)
	1/2	INBV3W-04OD	4.6	0.406	10.3	3.48 (88.4)	1.74 (44.2)	1.74 (44.2)	0.69 (17.5)	3.00 (76.2)		1 1/2 (38.1)	2.43 (61.7)	1.50 (38.1)
	3/4	INBV3W-06OD	3.8			2.46 (62.5)	1.23 (31.2)	1.20 (30.5)	0.44 (11.2)	1.53 (38.9)	3/16 (4.8)	25/32 (19.8)	1.56 (39.6)	0.78 (19.8)
Metric LOCK-FIT [®] tube fitting	3 mm	INBV3W-3OD	0.15	1.093	2.4	2.01 (51.1)	1.01 (25.7)	0.97 (24.6)	0.34 (8.6)	1.13 (28.7)	1/4 (6.4)	19/32 (15.0)	1.36 (34.5)	0.58 (14.7)
	6 mm	INBV3W-6OD	0.90	0.187	4.8	2.39 (60.7)	1.20 (30.5)	1.17 (29.7)	0.44 (11.2)	1.53 (38.9)	3/16 (4.8)	25/32 (19.8)	1.56 (39.6)	0.78 (19.8)
	8 mm	INBV3W-8OD	0.80			2.46 (62.5)	1.23 (31.2)	1.20 (30.5)						
	10 mm	INBV3W-10OD	2.0	0.281	7.1	2.89 (73.4)	1.45 (36.8)	1.43 (36.3)	0.56 (14.2)	2.00 (50.8)	3/8 (9.7)	1 1/3 (28.7)	2.07 (52.6)	1.12 (28.4)
	12 mm	INBV3W-12OD	4.6	0.375	9.5	3.48 (88.4)	1.74 (44.2)	1.74 (44.2)	0.69 (17.5)	3.00 (76.2)		1 1/2 (38.1)	2.43 (61.7)	1.50 (38.1)
Female NPT/PT	1/8	INBV3W-01F	0.30	0.125	3.2	1.63 (41.4)	0.81 (20.6)	0.81 (20.6)	0.34 (8.6)	1.13 (28.7)	1/4 (6.4)	19/32 (15.0)	1.36 (34.5)	0.58 (14.7)
	1/4	INBV3W-02F	1.7	0.281	7.1	2.50 (63.5)	1.25 (31.8)	1.25 (31.8)	0.56 (14.2)	2.00 (50.8)	3/8 (9.7)	1 1/3 (28.7)	2.07 (52.6)	1.12 (28.4)
	3/8	INBV3W-03F	1.5			3.13 (79.5)	1.56 (39.6)	1.56 (39.6)	0.69 (17.5)	3.00 (76.2)		1 1/2 (38.1)	2.43 (61.7)	1.50 (38.1)
	1/2	INBV3W-04F	3.5	0.406	10.3	3.13 (79.5)	1.56 (39.6)	1.56 (39.6)	0.69 (17.5)	3.00 (76.2)		3/8 (9.7)	1 1/2 (38.1)	2.43 (61.7)
5-way														
Female LOCK-FIT [®] tube fitting	1/8	INBV5W-01OD	0.07	0.062	1.6	1.94 (49.3)	0.97 (24.6)	0.97 (24.6)	0.44 (11.2)	1.53 (38.9)	5/32 (4.1)	29/32 (23.1)	1.69 (42.9)	—
Female NPT/PT	1/8	INBV5W-01F	0.07	0.062	1.6	1.55 (39.4)	0.78 (19.8)	0.88 (22.4)	0.44 (11.2)	1.53 (38.9)	5/32 (4.1)	29/32 (23.1)	1.69 (42.9)	—
	1/2	INBV5W-04F	3.5	0.406	10.3	3.13 (79.5)	1.56 (39.6)	1.56 (39.6)	0.69 (17.5)	3.00 (76.2)	3/8 (9.7)	1 1/2 (38.1)	2.43 (61.7)	—
7-way														
Female LOCK-FIT [®] tube fitting	1/16	INBV5W-1/16OD	0.05	0.052	1.3	1.94 (49.3)	0.97 (24.6)	0.97 (24.6)	0.44 (11.2)	1.53 (38.9)	5/32 (4.1)	29/32 (23.1)	1.69 (42.9)	—
	1/8	INBV5W-01OD	0.07	0.062	1.6									

All dimensions are in millimeters unless otherwise specified, only for reference subject to change.

CROSSOVER (4 WAY AND 6 WAY) VALVE

FEATURES

- Capsule packing allows crossover of two or three streams.
- Machined stops provide positive port positioning.
 - Stop plate material: aluminum/ASTM B209 or B211.

Pressure-Temperature Ratings

Valve Series	Temperature °F (°C)	Working Pressure psig (bar)
4-way	50 to 150 (10 to 65) ^①	2500 (172)
4-way		1500 (103)
6-way		500 (34.4)

Ordering Information and Dimensions

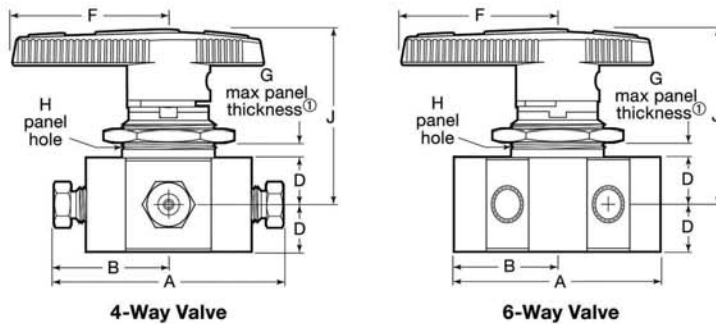
Add a material designator to a INBV series basic ordering number.

Material	Designator
316 SS	SS
Brass	B

4-Way Valve



6-Way Valve



① 1/8 in. (3.2 mm) minimum panel thickness.

End Connections		Basic Ordering Number	C _v	Orifice in. (mm)	Dimensions in. (mm)						
Inlets/Outlets	Size				A	B	D	F	G	H	J
4-Way Valves											
Female LOCK-FIT tube fittings	1/16 in.	INBV4W-1/16OD	0.06	0.052 (1.32)	1.55 (39.4)	0.78 (19.8)	0.44 (11.2)	1.53 (38.9)	3/16 (4.8)	29/32 (23.1)	1.68 (42.7)
	1/8 in.	INBV4W-010D	0.08	0.062 (1.57)	1.95 (49.5)	0.98 (24.9)	0.44 (11.2)	1.53 (38.9)	3/16 (4.8)	29/32 (23.1)	1.68 (42.7)
Female NPT	1/8 in.	INBV4W-01F	0.08	0.062 (1.57)	1.55 (39.4)	0.78 (19.8)	0.44 (11.2)	1.53 (38.9)	3/16 (4.8)	29/32 (23.1)	1.69 (42.9)
	1/2 in.	INBV4W-04F	1.6	0.281 (7.14)	3.13 (79.5)	1.56 (39.6)	0.69 (17.5)	3.00 (76.2)	3/8 (9.7)	1 1/2 (38.1)	2.43 (61.7)
6-Way Valves											
Female LOCK-FIT tube fittings	1/16 in.	INBV6W-1/16OD	0.06	0.052 (1.32)	1.95 (49.5)	0.97 (24.6)	0.44 (11.2)	1.53 (38.9)	3/16 (4.8)	29/32 (23.1)	1.68 (42.7)
	1/8 in.	INBV6W-010D	0.08	0.062 (1.57)	1.95 (49.5)	0.97 (24.6)	0.44 (11.2)	1.53 (38.9)	3/16 (4.8)	29/32 (23.1)	1.68 (42.7)

ORDERING INFORMATION

INBV	2W	01	OD
Group	Type	End Connection Size	Connection Type
INBV= TOP-LOADED DESIGN ONE PIECE BALL VALVE	2W=2Way 3W=3Way 4W=4Way 5W=5Way 6W=6Way 7W=7Way	1/16=1/16" 3=3mm 01=1/8" 6=6mm 02=1/4" 8=8mm 03=3/8" 10=10mm 04=1/2" 12=12mm 06=3/4"	OD=Tube End F=Female Thread M=Male Thread