

INBV TOP-LOADED DESIGN ONE PIECE BALL VALVE

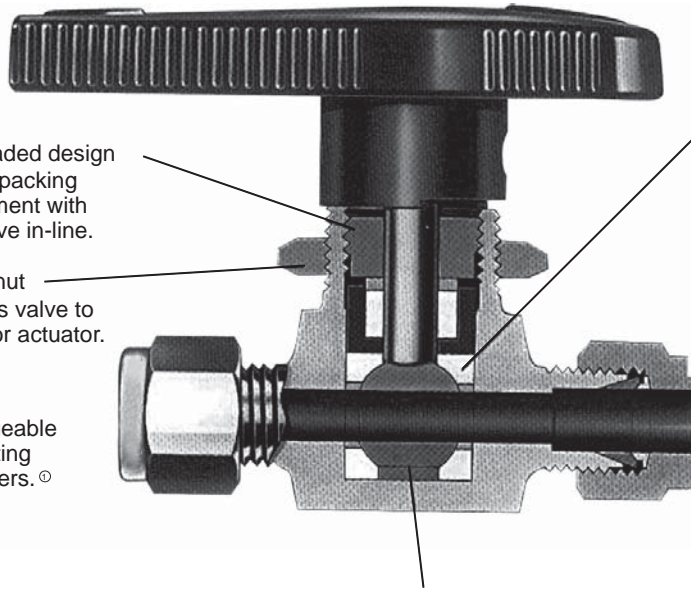
Specification of Construction

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. ©

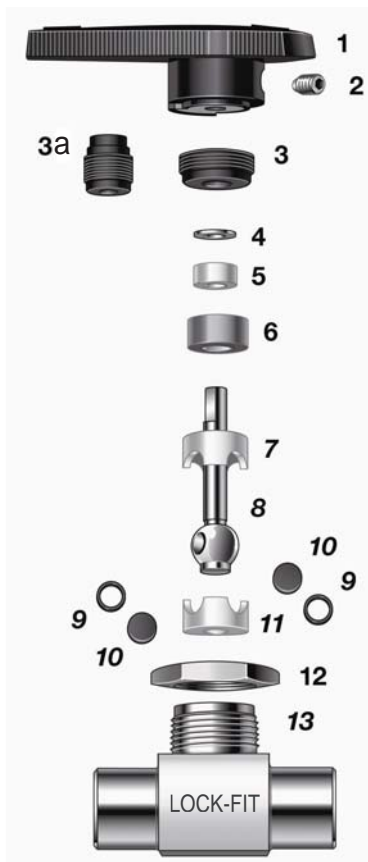


Capsule seat packing

- 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.

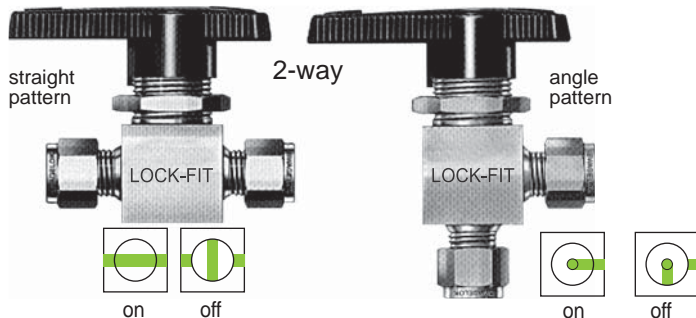
One-piece ball stem eliminates backlash to ensure alignment of ball and orifice.



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

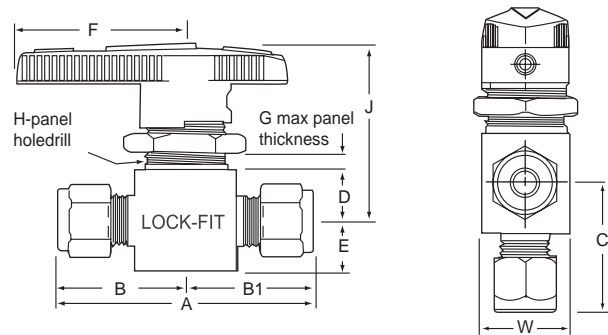


Flow Data

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	16.0	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	

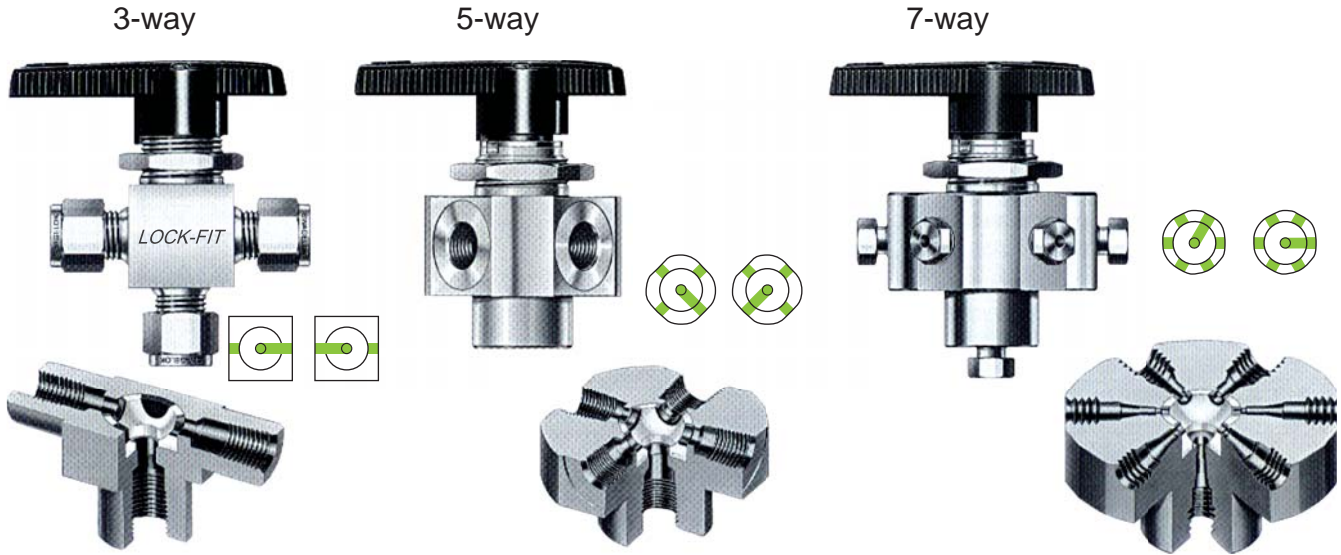


Dimensions

End Connection		Basic Ordering Number	C _v	C _v Angle	Orifice		Inches (mm)										
Type	Size				in.	mm	A	B	B1	C [Ⓜ]	D	E	F	G [Ⓜ]	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)	3/8 (9.5)	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)		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)	1.17 (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)
	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 (36.9)	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)
	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			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)		1 1/8 (28.6)	2.07 (52.6)	1.12 (28.4)
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

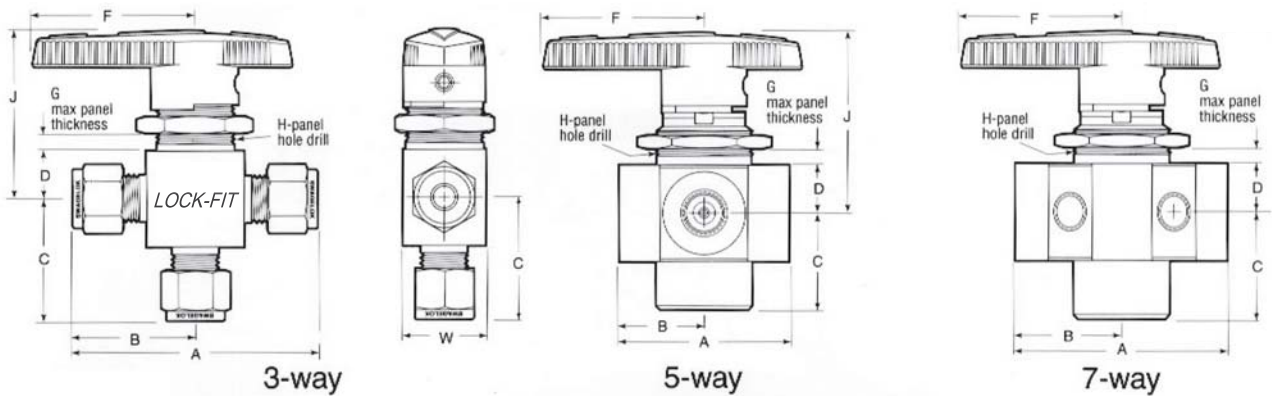
- Unique, top-loaded capsule packing allows reliable switching.
- Flow can be switched from a single inlet to multiple outlets or from multiple inlets to a common outlet.
- 3-way valve has a center-off position.
- 5- and 7-way series valves have a spring-loaded detent for exact port positioning.

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)	3/16 (4.8)	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)				
	1/2	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)	3/8 (9.7)	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)						
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)				
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)				
	1/2	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)				
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									

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