



Type-23 Multiport® Ball Valve

Standard Features (Sizes 1/2" – 6")

- True union design on all three ports
- Double O-ring seals on stem for added protection
- Integrally molded ISO mounting pad for both manual and actuated operations
- Blow-out proof, solid mold bottom entry design
- Blocks from left or right union ports, leaving full pressure on the opposite end of valve
- Standard L port ball permits flow from common port to either left or right port or to off position
- PTFE seats with elastomeric backing cushions ensure bubble tight shut-off and a low fixed torque, while at the same time compensating for wear
- Built-in spanner wrench on the handle for valve disassembly and assembly
- All sizes rated for full vacuum service
- Eliminates need for additional valve and tee

Options

- Pneumatic and electric actuators and accessories
- Stem extensions
- 2" square operating nut or T nut
- Locking handles
- Limit switches
- T port, double L"port

Cross Port Ball Options (1/2" - 2" only)

- Four different flow patterns through three separate ports are possible because of the crossed flow patterns within the ball
- Changing position of handle changes flow pattern.
Handle rotates 360 degrees

Specifications

Sizes: 1/2" – 6"

Models: PVC & CPVC: Socket, Threaded and Flanged (ANSI)

Bodies: PVC, CPVC, PP, PVDF

Seats: PTFE backed with EPDM or FKM

Seals: EPDM or FKM or AFLAS®†

**Sizes 1/2" - 4" PVC/EPDM/FKM Models
NSF-61 Certified**

† Trademark of Asahi Glass Co., Ltd.

Parts List (Sizes 1/2" – 6")

PARTS			
NO.	DESCRIPTION	PCS.	MATERIAL
1	Body	1	PVC, CPVC, PP, PVDF
2	Ball	1	PVC, CPVC, PP, PVDF
3	Carrier	2	PVC, CPVC, PP, PVDF
4	End Connector	3	PVC, CPVC, PP, PVDF
5	Union Nut	3	PVC, CPVC, PP, PVDF
6	Stem	1	PVC, CPVC, PP, PVDF
7	Seat	2	PTFE
8	O-Ring (A)	3	EPDM, FKM, Others
9	O-Ring (B)	2	EPDM, FKM, Others
10	Cushion*	2	EPDM, FKM, Others
	O-Ring (C)**		
11	O-Ring (D)	1	EPDM, FKM, Others
12	O-Ring (E)	1	EPDM, FKM, Others
13	Stop Ring***	3	PVDF
14	Handle	1	ABS
15	Screw	1	304 Stainless Steel
4a	Ring****	3	304 Stainless Steel

* Used for size 1/2" – 2", **Used for size 3" and 4".

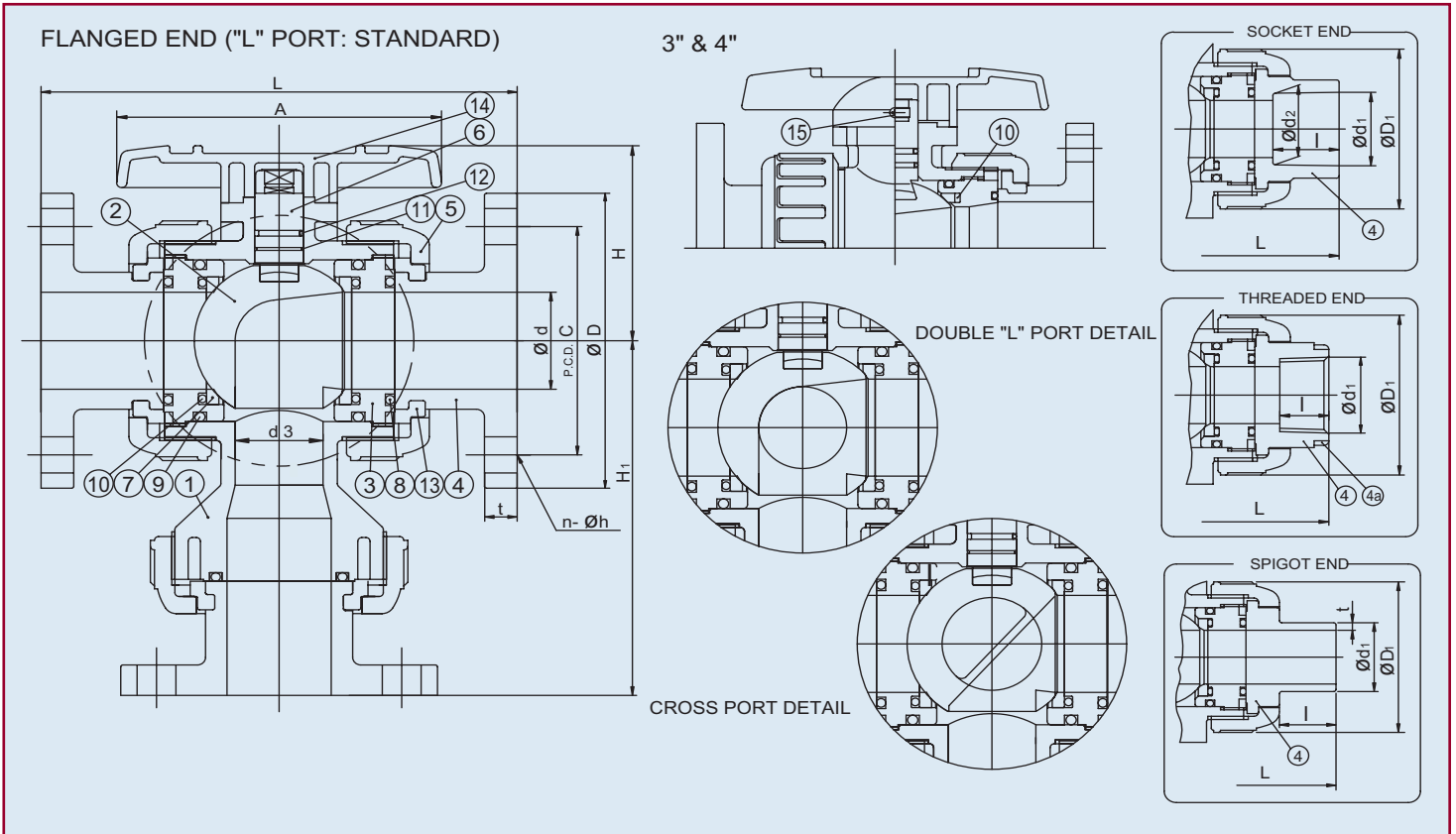
*** Used for flanged end.

****Used for CPVC body, threaded end, 1/2" – 1".



Type-23

Multiport® Ball Valves



Dimensions (Sizes 1/2" - 4") (in.) For 6" size consult factory.

NOMINAL SIZE		FLANGED									THREADED				D1	H	A
		ANSI CLASS 150							PP, PVDF (IPS)								
INCHES	mm	d	d3	D	C	n	h	L	t	H1	d1	l	L	H1			
1/2	15	0.59	0.59	3.50	2.38	4	0.62	5.63	0.47	3.70	1/2 - 14 NPT	0.59	4.02	2.89	1.89	2.03	3.62
3/4	20	0.79	0.79	3.88	2.75	4	0.62	6.77	0.55	4.50	3/4 - 14 NPT	0.67	4.72	3.48	2.36	2.34	3.94
1	25	0.98	0.98	4.25	3.12	4	0.62	7.36	0.55	5.24	1 - 11-1/2 NPT	0.79	5.16	4.13	2.76	2.68	4.33
1-1/2	40	1.57	1.26	5.00	3.88	4	0.62	8.35	0.63	6.50	1-1/2 - 11-1/2 NPT	0.98	6.42	5.53	3.94	3.50	5.16
2	50	2.01	1.69	6.00	4.75	4	0.75	9.21	0.63	7.34	2 - 11-1/2 NPT	1.1	7.76	6.61	4.96	4.04	6.26
3	80	3.07	2.70	7.50	6.00	4	0.75	11.97	0.71	10.06	3 - 8 NPT	1.38	10.39	9.25	5.98	5.51	9.45
4	100	3.94	3.54	9.00	7.50	4	0.75	14.65	0.71	12.01	4 - 8 NPT	1.77	14.17	11.77	8.27	7.01	11.81

NOMINAL SIZE		SOCKET											SPIGOT (BUTT END)								
		PVC, CPVC					PP, PVDF (DIN)					PP, PVDF (IPS)				PP, PVDF					
		ANSI SCH 80/40					DIN 16962									DIN 3442		PP	PVDF		
INCHES	mm	d1	d2	l	L	H1	d1	d2	l	L	H1	d1	l	L	H1	d1	l	t	t	L	H1
1/2	15	0.848	0.836	0.875	4.45	3.08	0.768	0.760	0.57	3.90	2.80	0.83	0.87	4.45	3.09	0.787	0.728	0.098	0.075	4.88	3.27
3/4	20	1.058	1.046	1.000	5.08	3.56	0.965	0.957	0.63	4.49	3.27	1.03	1.00	5.08	3.61	0.984	0.866	0.106	0.075	5.67	3.90
1	25	1.325	1.310	1.125	5.75	4.32	1.240	1.232	0.71	4.84	3.94	1.30	1.13	5.75	4.37	1.260	0.886	0.118	0.094	6.06	4.53
1-1/2	40	1.912	1.894	1.375	7.24	5.71	1.947	1.937	0.93	5.83	5.16	1.89	1.37	7.24	5.85	1.969	1.260	0.181	0.118	6.85	6.02
2	50	2.387	2.369	1.500	8.23	6.66	2.461	2.445	1.08	6.93	6.06	2.36	1.50	8.23	6.76	2.480	1.417	0.228	0.118	8.82	7.01
3	80	3.516	3.492	1.875	11.10	9.59	3.512	3.498	1.4	9.88	8.82	3.48	1.87	11.10	11.10	3.543	1.496	0.323	0.169	11.61	9.69
4	100	4.518	4.491	2.000	13.90	11.58	4.293	4.278	1.63	12.20	10.98	4.48	2.25	14.37	14.37	4.331	1.752	0.394	0.209	12.72	11.85

Type-23

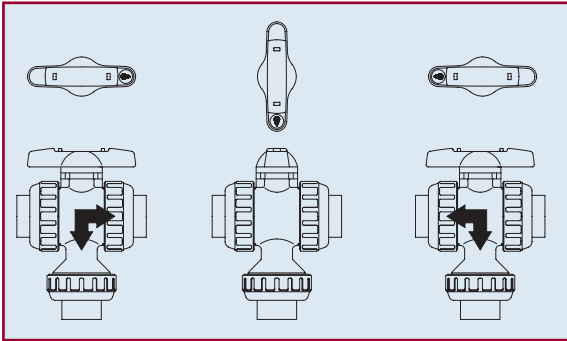
Multiport® Ball Valves

Pressure vs. Temperature (psi, water, non-shock)

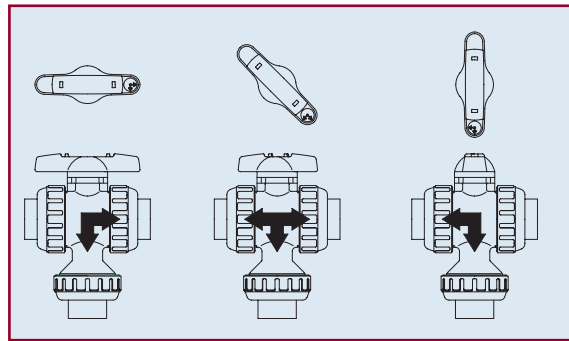
NOMINAL SIZE		PVC			CPVC				PP			PVDF			
		30° F 70° F	71° F 105° F	106° F 120° F	30° F 120° F	121° F 140° F	141° F 175° F	176° F 195° F	- 5° F 85° F	86° F 140° F	141° F 175° F	- 5° F 140° F	141° F 175° F	176° F 195° F	196° F 210° F
1/2 - 2	15-50	150	150	150	150	120	85	55	150	90	60	150	120	110	85
3-4	80-100	150	150	150	150	85	55	45	150	75	45	150	100	85	70

Available Flow Patterns

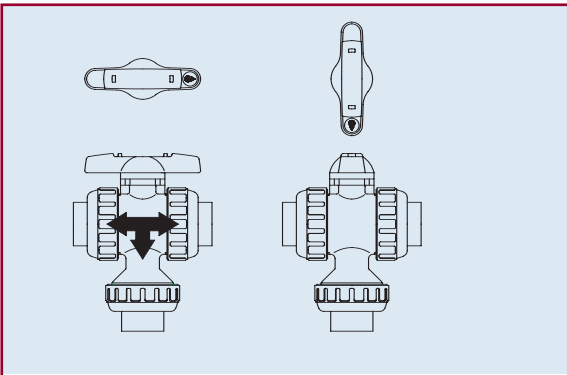
L-Port



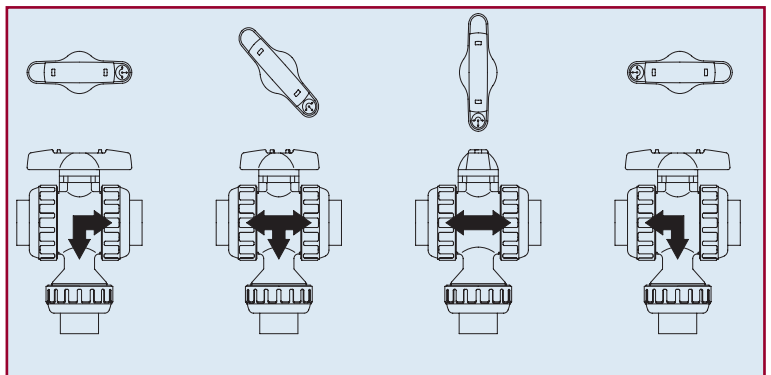
Double L-Port



T-Port



Cross Port (1/2" - 2" only)



Automation

For Pneumatic Actuation:

Double L port ball is supplied as a standard feature. Other configurations available as options.

Pneumatic actuators are two-position, 90 degree rotation.

For Electric Actuation:

L port ball is supplied as a standard feature. All other ball configurations are available as options.

Electric actuators are two-position, 180-degree rotation with the option for a third "center" position.

Sample Specification

All Type-23 Multiport® ball valves shall be of molded thermoplastic construction with union ends on all three ports. Carriers must thread into the body in order to provide blocking capabilities in off position. Stem shall have double O-Rings and be of blow-out proof design. The valve handle shall double as carrier removal and/or tightening tool. ISO mounting pad shall be integrally molded to valve body. PVC conforming to ASTM D1784 Cell Classification 12454A, CPVC conforming to ASTM D1784 Cell Classification 23567-A, PP conforming to ASTM D4101 Cell Classification PPO210B67272 and PVDF conforming to ASTM D3222 Cell Classification Type II. The valves shall be rated to 150psi at 70° F. PTFE seats must have elastomeric backing cushion of the same material as the valve seals, as manufactured by Asahi/America, Inc.

Caution

- Never remove valve from pipeline under pressure.
- Always wear protective gloves and goggles.
- Watch out for trapped fluid in valve.
- Only L port and T port valves are closed when handle is positioned perpendicular (90 degrees).
- Even if handle is perpendicular, valve is not closed if the ball is in the following positions, based upon the following porting configurations:
 - (a.) Double L port – Flow is to right or left
 - (b.) Cross-port – Flow is horizontal as in regular ball valve.

Troubleshooting

What if the fluid still flows when valve is closed?

1. Carrier is not properly tightened. Tighten it firmly.
2. PTFE seat is damaged or worn. Replace seat.
3. Foreign material is caught between ball and PTFE seat. Remove material and clean.
4. Ball is damaged or worn. Change ball.

What if fluid leaks between body and nuts?

1. Carrier or face O-ring is damaged, worn, or missing. Replace O-ring.

What if stem leaks?

1. Stem is damaged. Replace stem.
2. O-ring is damaged. Replace O-ring.

What if handle does not rotate smoothly?

1. Foreign material has formed on the ball or seat. Clean both.
2. Internal part(s) chemically attacked or swollen. Refer to Asahi/America Chemical Resistance Chart for compatibility. Replace part(s) as required.
3. Carrier overtightened. Tighten properly.

What if handle rotates too freely?

1. Stem is damaged. Replace stem.
2. Handle is not engaged with stem. Disassemble and reengage. Inspect.

Cv Values

NOMINAL SIZE		Cv	
INCHES	mm	L-PORT	DBL-L
1/2	15	7.4	6.3
3/4	20	10	8.5
1	25	23	20
1-1/2	40	43	36
2	50	59	45
3	80	130	99
4	100	260	200

Weight (lbs.)

NOMINAL SIZE		SOCKET THREADED	FLANGED
INCHES	mm		
1/2	15	0.66	1.76
3/4	20	1.10	2.42
1	25	1.76	3.52
1-1/2	40	4.18	6.36
2	50	5.73	8.59
3	80	15.43	18.95
4	100	35.27	39.90

Type-23 True-Union Multiport Ball Valves

1.0 Scope:

All requirements are for PVC, CPVC, Polypropylene & PVDF Type-23 True-Union Multiport Ball Valves and accessories.

2.0 Materials:

U-PVC – Conforming to ASTM D1784 Cell Classification 12454 A

CPVC – Conforming to ASTM D1784 Cell Classification 23567A

Polypropylene – Conforming to ASTM D4101 Cell Classification PP0210B67272

PVDF – Conforming to ASTM D3222-91A Cell Classification Type II

FKM – Viton® Fluorocarbon Rubber

EPDM – Ethylene Propylene Diene Terpolymer Rubber

AFLAS – Tetrafluoroethylene / Propylene Dipolymer

PTFE – Teflon® Polytetrafluoroethylene

3.0 VALVES:

Ball valves shall be PVC, CPVC, PP or PVDF body with EPDM, FKM or AFLAS seals and PTFE seats. Valves shall be of blowout proof design by having double O-ring stem seals, and have elastomeric backing cushions behind the PTFE seats for low stem torque, and to compensate for wear. The valve lever handle shall double as the spanner wrench for valve disassembly and maintenance. Valves sizes 1/2" – 6" shall feature a molded ISO bolt pattern for accessory mounting.

3.1 Operators

Type-23 1/2" – 6" (Lever Type standard)

Lever Handle to be Asahi Standard valve handle Red color.

3.2 Approved Manufacturer

Valves shall be provided by Asahi/America, Inc. of Lawrence, MA with no approved equals.

Manufacturer must be ISO-9001 certified.

3.3 Pressure Vs. Temperature

PVC, CPVC, & PVDF Socket, Threaded, Butt or Flanged Valves shall have a pressure rating of:
150 psi at 70° F sizes 1/2" – 6"

4.0 ACCESSORIES:

4.1 Available Flow Patterns

L-Port

Standard ball supplied permits 180° rotation from Left port to Right port with "OFF" Position when handle is cycled to the center 90° position.

Double-L Port

Optional ball typically used for pneumatic actuation. Permits 90° rotation from Left port to Right port with no "OFF" position.

T-Port

Optional ball permits straight thru flow straight from left port to right port with the bottom port as the inlet, 90° rotation of handle will give "OFF" position.

Cross Port

Available 1/2" – 2" only. Permits straight thru flow same as T-port, with the option to isolate and shut off bottom port leaving straight thru flow like 2-way ball valve eliminating the need for a 2-way shut off valve off bottom port of valve. 90° rotation of the handle will allow for L-port flow pattern.

4.2 Stem Extensions

Stem extensions where required should be designed, built and provided by the Asahi/America, Inc., and be 1 of 3 styles:

Style BV-A Two piece extension with outer housing 100% sealed either free standing or supported design.

Style BV-B Single piece extension either free standing or supported design

Style BV-P Single piece Panel Mount Extension made of PVC

Minimum Length = 4"

Maximum Length = 12"

Not Available for 4" or 6" Valves

4.3 Actuation

Actuation where required should be designed, built and provided by Asahi/America, Inc., and be either pneumatic (Series 79P) or electric (Series 83, 94, or 92) type. All actuation accessories to be provided and installed by Asahi/America, Inc. in accordance with manufacturer's requirements.

4.4 Locking Devices

Where required locking devices can be installed over the valve handle to prevent unauthorized operation of the valve.

4.5 Operating Nuts

Where required 2" square operating nuts can be installed in place of valve handle.

Materials of construction – Anodized Aluminum.

5.0 Certifications:

5.1 NSF-61

PVC/EPDM and PVC/FKM models shall have NSF-61 Certification for use in drinking water applications.

6.0 Installation Procedures:

All valve joints shall be prepared using the preferred joining method for the valve material and installation type in accordance with all requirements put forth in the Type-23 Operation & Maintenance manual. All accessories should be installed in accordance with the manufacturer's requirements as well as any facility requirements.