

Ball Valves (B Series)

Catalog 4121-B
Revised, November 2001



Two-Way B Series Ball Valves

Introduction

Parker manually, pneumatically, and electrically actuated two-way B Series Ball Valves provide quick 1/4 turn on-off control of fluids utilized in process and instrumentation applications. A broad selection of valve body, seat, and seal materials provide a wide range of pressures and temperatures at which the valve may be used.

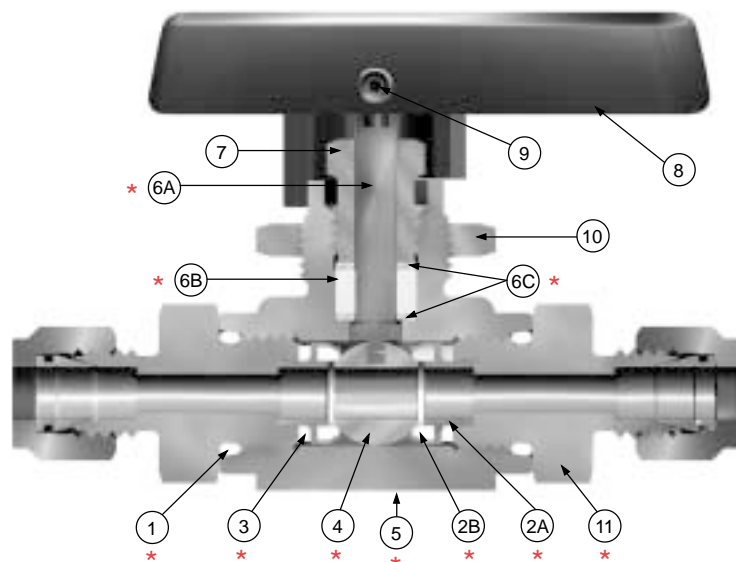
Features

- Free floating ball design provides seat wear compensation
- Available in 316 stainless steel and brass construction. Alloy N24135 and Alloy N30002 construction available upon request
- Micro-finished ball provides a positive seal
- Straight through flow path for minimum pressure drop
- Bi-directional flow
- Wide variety of US Customary and SI ports
- 90 degree actuation
- Panel mountable
- Adjustable PTFE stem seal can be maintained in-line
- Handle indicates flow direction
- Low operating torques
- Positive handle stops
- Color coded handles
- Optional pneumatic and electric actuation
- Optional live-loaded PTFE stem seals
- Optional non-adjustable O-ring stem seals
- Optional upstream and downstream drain models
- Optional stainless steel and extended handles

Specifications

- Pressure Ratings:
 - 316 Stainless Steel**
 - 6000 psig (414 bar) CWP*
 - 1500 psig (103 bar) with PTFE seats
 - Brass**
 - 3000 psig (207 bar) CWP
 - 1500 psig (103 bar) with PTFE seats
 - Alloy N24135 (400)**
 - B2 and B6:
 - 3000 psig (207 bar) CWP
 - 1500 psig (103 bar) with PTFE seats
 - B8:
 - 2000 psig (138 bar) CWP
 - 1500 psig (103 bar) with PTFE seats
 - Alloy N30002 (C-276)**
 - B2 and B6:
 - 4000 psig (276 bar) CWP
 - 1500 psig (103 bar) with PTFE seats
 - B8:
 - 3000 psig (207 bar) CWP
 - 1500 psig (103 bar) with PTFE seats

* B8 Series: 6000 psig rating or 4400 psig (303 bar) CWP



Model Shown: 6A-B6LJ-SSP

Pressure Rating and Tubing Selection

For working pressures of A-LOK® and CPI™ tube connections, please see the Instrument Tubing Selection Guide (Bulletin 4200-TS), found in the Technical Section of the Parker Instrumentation Products Master Binder, or the Parker Instrument Fitting Installation Manual (Bulletin 4200-B4).

For working pressures of valves with external or internal pipe threads, please see Catalog 4260, Instrumentation Pipe Fittings.

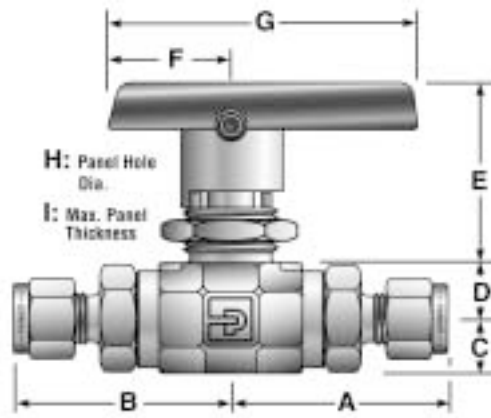
Materials of Construction

Item #	Part Description	Stainless Steel	Brass
*1	Connector O-Ring	PTFE**	
*2A	Seat Retainer	ASTM A 276 Type 316	ASTM B 16 Alloy C36000
*2B	Seat	PTFE, PCTFE, PEEK	
*3	Retainer Seal	PTFE**	
*4	Ball	316 Stainless Steel	
*5	Body	ASTM A 351 Grade CF3M	ASTM B 283 Alloy C37700
*6A	Stem (PTFE Coated)	ASTM A 276 Type 316	
*6B	Stem Seal	PTFE**	
*6C	Stem Washer	316 Stainless Steel	
7	Packing Nut	ASTM A 479 Type 316	ASTM B 453 Alloy C34000
8	Handle	Nylon 6/6	
9	Handle Set Screw	Stainless Steel	
10	Panel Nut	316 Stainless Steel	
*11	End Connector	ASTM A 479 Type 316	ASTM B 16 Alloy C36000

* Wetted Parts

** Optional stem seal and body seal materials are described in the How to Order section
Lubrication: Perfluorinated Polyether

Two-Way B Series Ball Valves



Model Shown: 4A-B6LJ-SSP

Two-Way Valve Dimensions / Flow Data

Port Size	Basic Part No.	Flow Data				End Connections		Dimensions Inches (mm)								
		Inch	mm	C_v	X_T^*	Port 1	Port 2	A'	B'	C	D	E	F	G	H	I
1A	B2L	0.052	1.3	0.06	0.45	1/16" A-LOK®		1.30	1.30	0.33 (8.4)	0.33 (8.4)	0.94 (23.9)	0.75 (19.1)	1.88 (47.8)	0.58 (14.7)	0.13 (3.3)
1Z						1/16" CPI™		(33.0)	(33.0)							
2A		0.093	2.4	0.21	0.47	1/8" A-LOK®		1.36	1.36							
2Z						1/8" CPI™		(34.5)	(34.5)							
2F		0.165	4.2	0.93	0.43	1/8" Female NPT		1.07	1.07							
2M						1/8" Male NPT		(27.2)	(27.2)							
4A		0.165	4.2	0.93	0.43	1/4" A-LOK®		1.48	1.48							
4Z						1/4" CPI™		(37.6)	(37.6)							
4M		0.165	4.2	0.93	0.43	1/4" Male NPT		1.35	1.35							
4Q						1/4" UltraSeal		(34.3)	(34.3)							
4V	0.165	4.2	0.93	0.43	1/4" VacuSeal		1.25	1.25								
M3A	B6L	0.086	2.2	0.18	0.44	3mm A-LOK®		1.37	1.37	0.42 (10.7)	0.47 (11.9)	1.53 (38.9)	1.00 (25.4)	2.50 (63.5)	0.77 (19.6)	0.25 (6.4)
M3Z						3mm CPI™		(34.8)	(34.8)							
2A		0.093	2.4	0.26	0.46	1/8" A-LOK®		1.65	1.65							
2Z						1/8" CPI™		(41.9)	(41.9)							
4A		0.187	4.7	1.04	0.42	1/4" A-LOK®		1.74	1.74							
4Z						1/4" CPI™		(44.2)	(44.2)							
4F		0.250	6.4	2.34	0.29	1/4" Female NPT		1.51	1.51							
4M						1/4" Male NPT		(38.4)	(38.4)							
4Q		0.180	4.6	1.03	0.42	1/4" UltraSeal		1.62	1.62							
4V		0.188	4.8	1.04	0.42	1/4" VacuSeal		1.51	1.51							
6A	0.250	6.4	2.34	0.29	3/8" A-LOK®		1.75	1.75								
6Z					3/8" CPI™		(44.5)	(44.5)								
6M	0.250	6.4	2.34	0.29	3/8" Male NPT		1.80	1.80								
6Q					3/8" UltraSeal		(45.7)	(45.7)								
M6A	0.187	4.7	1.04	0.42	6mm A-LOK®		1.62	1.62								
M6Z					6mm CPI™		(41.1)	(41.1)								
M8A	0.250	6.4	2.34	0.42	8mm A-LOK®		1.51	1.51								
M8Z					8mm CPI™		(38.4)	(38.4)								
M10A	0.250	6.4	2.34	0.42	10mm A-LOK®		1.78	1.78								
M10Z					10mm CPI™		(45.2)	(45.2)								
6F	B8L	0.406	10.3	6.42	0.37	3/8" Female NPT		1.81	1.81	0.69 (17.5)	0.70 (17.8)	1.74 (44.2)	1.50 (38.1)	4.00 (101.6)	0.90 (22.9)	0.38 (9.7)
8F						1/2" Female NPT		(46.0)	(46.0)							
8A		0.406	10.3	6.42	0.37	1/2" A-LOK®		1.95	1.95							
8Z						1/2" CPI™		(49.5)	(49.5)							
8M		0.406	10.3	6.42	0.37	1/2" Male NPT		2.15	2.15							
8Q						1/2" UltraSeal		(54.6)	(54.6)							
8V		0.406	10.3	6.42	0.37	1/2" VacuSeal		2.22	2.22							
12A		0.406	10.3	6.42	0.37	3/4" A-LOK®		1.92	1.92							
12Z						3/4" CPI™		(48.8)	(48.8)							
M12A		0.375	9.5	5.57	0.37	12mm A-LOK®		2.21	2.21							
M12Z	12mm CPI™						(56.1)	(56.1)								
M16A	0.406	10.3	6.42	0.37	16mm A-LOK®		2.33	2.33								
M16Z					16mm CPI™		(59.2)	(59.2)								

* Tested in accordance with ISA S75.02. Gas flow will be choked when $P_1 - P_2 / P_1 = X_T$.

† For CPI™ and A-LOK®, dimensions are measured with nuts in the finger tight position

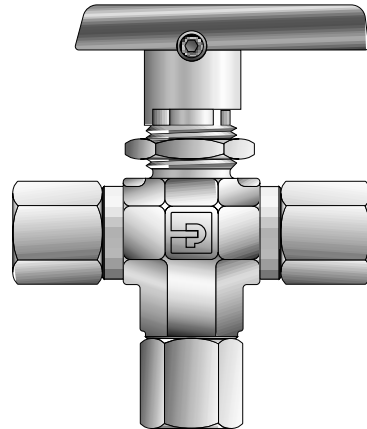
Three-Way B Series Ball Valves

Introduction

Parker manually, pneumatically, and electrically actuated three-way B Series Ball Valves may be used as diverting or selecting valves for fluids utilized in process and instrumentation applications. The standard three-way diverter valve is designed to accept media through the bottom port and direct it out of two outlet ports. When equipped with spring-loaded seats, the three-way valve may be used as a selector valve, alternately accepting media from either of two inlet sources (side ports) and directing it through a single outlet (bottom port).

Features

- Available in 316 stainless steel and brass construction. Alloy N24135 and Alloy N30002 construction available for Diverter Valves upon request
- Micro-finished ball provides a positive seal
- Wide variety of US Customary and SI ports
- 180 degree actuation
- Panel mountable
- Adjustable PTFE stem seal can be maintained in-line
- Handle indicates flow direction
- Low operating torques
- Positive handle stops
- Color coded handles
- Optional pneumatic and electric actuation
- Optional live-loaded PTFE stem seals
- Optional non-adjustable O-ring stem seals
- Optional stainless steel and extended handles



Model Shown: 4F-B6XJ2-BP

Diverter Valve Specifications

- Pressure Ratings with bottom port as inlet:

316 Stainless Steel

6000 psig (414 bar) CWP*

1500 psig (103 bar) with PTFE seats

Brass

3000 psig (207 bar) CWP

1500 psig (103 bar) with PTFE seats

Alloy N24135 (400)

B2 and B6:

3000 psig (207 bar) CWP

1500 psig (103 bar) with PTFE seats

B8:

2000 psig (138 bar) CWP

1500 psig (103 bar) with PTFE seats

Alloy N30002 (C-276)

B2 and B6:

4000 psig (276 bar) CWP

1500 psig (103 bar) with PTFE seats

B8:

3000 psig (207 bar) CWP

1500 psig (103 bar) with PTFE seats

- Pressure Rating with side ports as inlet:

150 psig (10 bar)

* B8 Series: 6000 psig rating or 4400 psig (303 bar) CWP

Selector Valve Specifications

(Spring Loaded – B6 and B8 models only)

- Pressure Rating with bottom port as inlet:

316 Stainless Steel

6000 psig (414 bar) CWP*

Brass

3000 psig (207 bar) CWP

- Pressure Rating with side ports as inlet:

316 Stainless Steel and Brass

3000 psig (207 bar) CWP

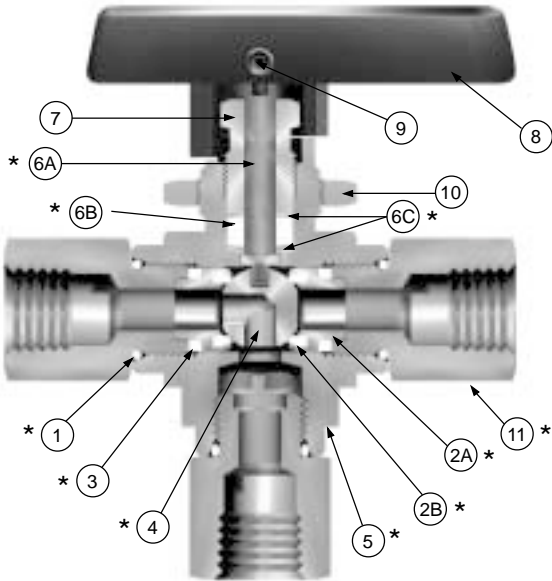
Pressure Rating and Tubing Selection

For working pressures of A-LOK® and CPI™ tube connections, please see the Instrument Tubing Selection Guide (Bulletin 4200-TS), found in the Technical Section of the Parker Instrumentation Products Master Binder, or the Parker Instrument Fitting Installation Manual (Bulletin 4200-B4).

For working pressures of valves with external or internal pipe threads, please see Catalog 4260, Instrumentation Pipe Fittings.

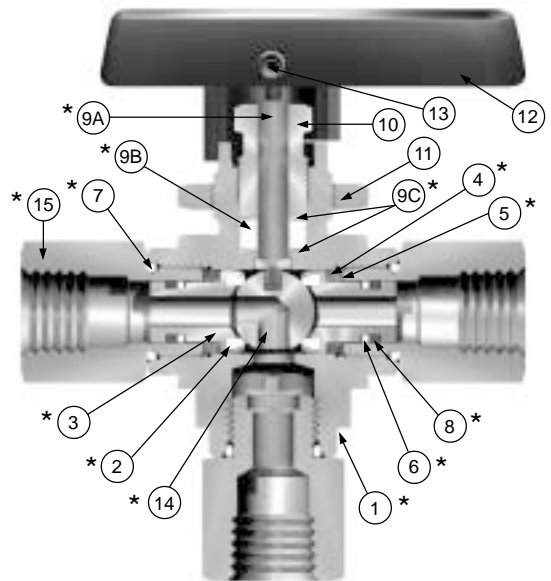
Three-Way B Series Ball Valves

Diverter Valve



Model Shown: 4F-B6XJ-SSP

Selector Valve



Model Shown: 4F-B6XS2-SSP

Materials of Construction

Item #	Part Description	Stainless Steel	Brass
*1	Connector O-Ring	PTFE**	
*2A	Seat Retainer	ASTM A 276 Type 316	ASTM B 16 Alloy C36000
*2B	Seat	PTFE, PCTFE, PEEK	
*3	Retainer Seal	PTFE**	
*4	Ball	316 Stainless Steel	
*5	Body	ASTM A 351 Grade CF3M	ASTM B 283 Alloy C37700
*6A	Stem (PTFE Coated)	ASTM A 276 Type 316	
*6B	Stem Seal	PTFE**	
*6C	Stem Washer	316 Stainless Steel	
7	Packing Nut	ASTM A 479 Type 316	ASTM B 453 Alloy C34000
8	Handle	Nylon 6/6	
9	Handle Set Screw	Stainless Steel	
10	Panel Nut	316 Stainless Steel	
*11	End Connector	ASTM A 479 Type 316	ASTM B 16 Alloy C36000

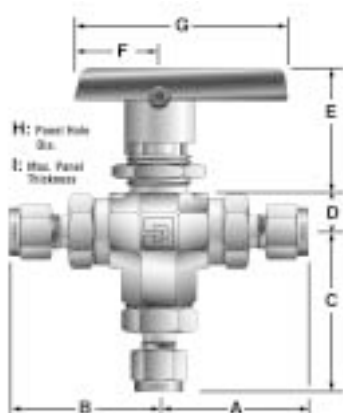
- * Wetted Parts
- ** Optional stem seal and body seal materials are located in the How to Order section
Lubrication: Perfluorinated polyether

Materials of Construction

Item #	Part Description	Stainless Steel	Brass
*1	Body	ASTM A 351 Grade CF3M	ASTM B 283 Alloy C37700
*2	Seat	PCTFE, PEEK	
*3	Seat Retainer	ASTM A 276 Type 316	
*4	Spring	ASTM A 564 Type 360	
*5	Seat Retainer Washer	316 Stainless Steel	
*6	Back-up Ring	PTFE	
*7	Connector O-ring	PTFE**	
*8	Seat Retainer O-ring	Fluorocarbon Rubber**	
*9A	Stem (PTFE Coated)	ASTM A 276 Type 316	
9B	Stem Seal	PTFE	
*9C	Stem Washer	316 Stainless Steel***	
10	Packing Nut	ASTM A 479 Type 316	ASTM B 453 Alloy C34000
11	Panel Nut	316 Stainless Steel	
12	Handle	Nylon 6/6	
13	Handle Set Screw	Stainless Steel	
*14	Ball	316 Stainless Steel	
*15	End Connector	ASTM A 479 Type 316	ASTM B 16 Alloy C36000

- * Wetted Parts
- ** Optional stem seal, seat retainer, and body seal materials are located in the How to Order section
- *** The lower stem washer material is PEEK for B8 Selector Valves
Lubrication: Perfluorinated polyether

Three-Way B Series Ball Valves



Model Shown: 4Z-B6XSPKR-V-SSP

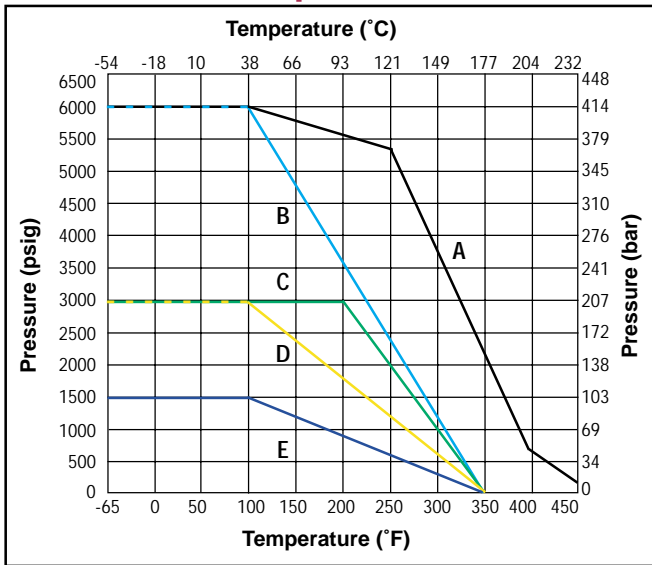
Three-Way Valve Dimensions / Flow Data

Port Size	Basic Part No.	Flow Data				End Connections			Dimensions Inches (mm)							
		Orifice		C_v	X_T^*	Port 1	Port 2	Port 3	A [†]	B [†]	C	D	E	F	G	H
Inch	mm															
1A	B2X	0.052	1.3	0.06	0.56	1/16" A-LOK®	1.30	1.30	1.39	0.33 (8.4)	0.94 (23.9)	0.75 (19.1)	1.88 (47.8)	0.58 (14.7)	0.13 (3.3)	
1Z						1/16" CPI™	(33.0)	(33.0)	(35.3)							
2A		0.093	2.4	0.21	0.64	1/8" A-LOK®	1.36	1.36	1.45							
2Z						1/8" CPI™	(34.5)	(34.5)	(36.8)							
2F		0.165	4.2	0.63	0.59	1/8" Female NPT	1.07	1.07	1.15							
2M						1/8" Male NPT	(27.2)	(27.2)	(29.2)							
4A		0.165	4.2	0.63	0.59	1/4" A-LOK®	1.18	1.18	1.26							
4Z						1/4" CPI™	(30.0)	(30.0)	(32.0)							
4M		0.165	4.2	0.63	0.59	1/4" Male NPT	1.48	1.48	1.56							
						1/4" Male NPT	(37.6)	(37.6)	(39.6)							
4Q	0.165	4.2	0.63	0.59	1/4" UltraSeal	1.35	1.35	1.43								
4V					1/4" UltraSeal	(34.3)	(34.3)	(36.3)								
M3A	B6X	0.086	2.2	0.18	0.63	3mm A-LOK®	1.25	1.25	1.33	0.47 (11.9)	1.53 (38.9)	1.00 (25.4)	2.50 (63.5)	0.77 (19.6)	0.25 (6.4)	
M3Z						3mm CPI™	(31.8)	(31.8)	(33.8)							
2A		0.093	2.4	0.21	0.38	1/8" A-LOK®	1.38	1.38	1.46							
2Z						1/8" CPI™	(35.1)	(35.1)	(37.1)							
4A		0.187	4.7	0.70	0.69	1/4" A-LOK®	1.62	1.62	1.76							
4Z						1/4" CPI™	(41.1)	(41.1)	(44.7)							
4F		0.196	5.0	0.87	0.74	1/4" Female NPT	1.51	1.51	1.65							
4M						1/4" Female NPT	(38.4)	(38.4)	(41.9)							
4M		0.196	5.0	0.87	0.74	1/4" Male NPT	1.62	1.62	1.76							
						1/4" Male NPT	(41.1)	(41.1)	(44.7)							
4Q		0.180	4.6	0.68	0.67	1/4" UltraSeal	1.51	1.51	1.65							
4V						1/4" UltraSeal	(31.8)	(31.8)	(33.8)							
6A		0.188	4.8	0.70	0.69	1/4" VacuSeal	1.75	1.75	1.89							
6Z						1/4" VacuSeal	(35.1)	(35.1)	(37.1)							
6M		0.196	5.0	0.87	0.74	3/8" A-LOK®	1.80	1.80	1.94							
						3/8" CPI™	(45.7)	(45.7)	(49.3)							
6M		0.196	5.0	0.87	0.74	3/8" Male NPT	1.62	1.62	1.76							
						3/8" Male NPT	(41.1)	(41.1)	(44.7)							
6Q		0.196	5.0	0.87	0.74	3/8" UltraSeal	1.52	1.52	1.65							
						3/8" UltraSeal	(38.6)	(38.6)	(41.9)							
M6A	0.187	4.7	0.70	0.69	6mm A-LOK®	1.75	1.75	1.88								
M6Z					6mm CPI™	(44.5)	(44.5)	(47.8)								
M8A	0.196	5.0	0.87	0.74	8mm A-LOK®	1.78	1.78	1.91								
M8Z					8mm CPI™	(45.2)	(45.2)	(48.5)								
M10A	0.196	5.0	0.87	0.74	10mm A-LOK®	1.81	1.81	1.95								
M10Z					10mm CPI™	(46.0)	(46.0)	(49.5)								
6F	B8X	0.406	10.3	3.62	0.64	3/8" Female NPT	1.95	1.95	2.29	0.70 (17.8)	1.74 (44.2)	1.50 (38.1)	4.00 (101.6)	0.90 (22.9)	0.38 (9.7)	
8A		0.406	10.3	3.62	0.64	1/2" A-LOK®	(49.5)	(49.5)	(58.2)							
8Z						1/2" CPI™	2.34	2.34	2.68							
8F		0.406	10.3	3.62	0.64	1/2" Female NPT	(59.4)	(59.4)	(68.1)							
8M		0.406	10.3	3.62	0.64	1/2" Male NPT	2.15	2.15	2.49							
						1/2" Male NPT	(54.6)	(54.6)	(63.2)							
8Q		0.375	9.5	3.46	0.62	1/2" UltraSeal	2.22	2.22	2.59							
						1/2" UltraSeal	(56.4)	(56.4)	(65.8)							
8V		0.406	10.3	3.62	0.64	1/2" VacuSeal	1.93	1.93	2.27							
						1/2" VacuSeal	(49.5)	(49.5)	(57.7)							
12A		0.406	10.3	3.62	0.64	3/4" A-LOK®	2.21	2.21	2.55							
12Z						3/4" CPI™	(56.1)	(56.1)	(65.0)							
M12A	0.375	9.5	3.46	0.62	12mm A-LOK®	2.33	2.33	2.67								
M12Z					12mm CPI™	(59.2)	(59.2)	(67.8)								
M16A	0.406	10.3	3.62	0.64	16mm A-LOK®	2.33	2.33	2.67								
M16Z					16mm CPI™	(56.9)	(56.9)	(65.5)								

* Tested in accordance with ISA S75.02. Gas flow will be choked when $P_1 - P_2 / P_1 = x_T$

† For CPI™ and A-LOK®, dimensions are measured with nuts in the finger tight position

Pressure vs. Temperature



Legend: A – PEEK Seats; B – PCTFE Seats; C – Selector Valves; D – Brass Valves; E – PTFE Seats
Note: To determine MPa, multiply bar by 0.1

Note: This Pressure versus Temperature chart reflects the maximum temperature range of indicated materials.

When combining seat and seal materials, the most restrictive temperature rating of the seats or seals becomes the limiting factor on valve temperature range.

Elastomeric stem packing and seals are recommended if the application subjects the valve to thermal cycling.

- Temperature Ratings:
 - PTFE: -65 °F to 350 °F (-54 °C to 177 °C)
 - PCTFE: -65 °F to 350 °F (-54 °C to 177 °C)
 - PEEK: -65 °F to 450 °F (-54 °C to 232 °C)
 - Buna-N Rubber: -40 °F to 250 °F (-40 °C to 121 °C)
 - Fluorocarbon Rubber: -15 °F to 450 °F (-26 °C to 232 °C)
 - Ethylene Propylene Rubber: -65 °F to 300 °F (-54 °C to 149 °C)

Flow Calculations with 1000 psig (69 bar) Inlet Pressure (Two-Way)

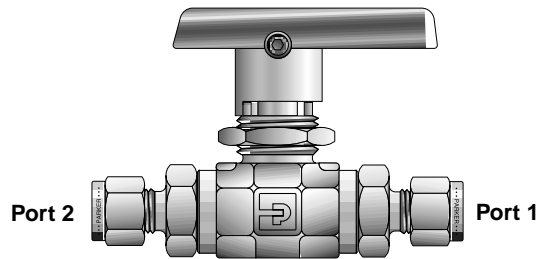
Valve Series	Maximum C_v	Pressure Drop Δp		Water @ 60 °F (16 °C)		Air @ 60 °F (16 °C)	
		psig	bar	gpm	m ³ /hr	scfm	m ³ /hr
B2L	0.93	10	0.7	2.9	0.7	92.4	156.2
		50	3.5	6.6	1.5	200.3	338.3
		100	6.9	9.3	2.1	272.0	458.9
B6L	2.34	10	0.7	7.4	1.7	231.7	391.5
		50	3.5	16.5	3.8	494.2	834.7
		100	6.9	23.4	5.3	657.0	1107.9
B8L	6.42	10	0.7	20.3	4.6	637.1	1076.8
		50	3.5	45.4	10.3	1373.6	2320.3
		100	6.9	64.2	14.6	1852.3	3124.8

Flow Calculations with 1000 psig (69 bar) Inlet Pressure (Three-Way)

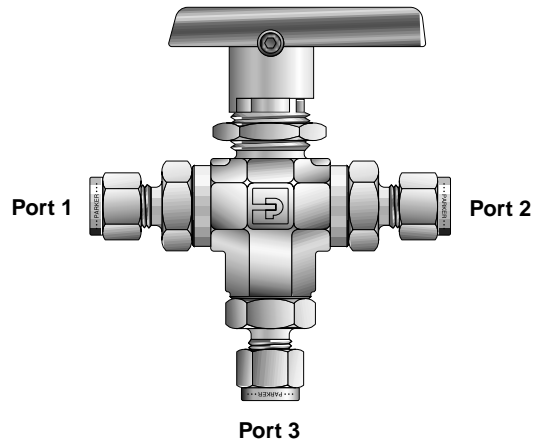
Valve Series	Maximum C_v	Pressure Drop Δp		Water @ 60 °F (16 °C)		Air @ 60 °F (16 °C)	
		psig	bar	gpm	m ³ /hr	scfm	m ³ /hr
B2X	0.63	10	0.7	2.0	0.5	62.7	106.0
		50	3.5	4.5	1.0	137.1	231.7
		100	6.9	6.3	1.4	188.4	317.9
B6X	0.87	10	0.7	2.8	0.6	86.7	146.6
		50	3.5	6.2	1.4	190.5	321.8
		100	6.9	8.7	2.0	263.2	444.4
B8X	3.62	10	0.7	11.5	2.6	360.6	609.5
		50	3.5	25.6	5.9	789.7	1343.5
		100	6.9	36.2	8.2	1087.4	1836.6

B Series Ball Valves

How to Order



Model Shown: 6A-B6LJ2-SSP



Model Shown: 6A-B6XJ2-SSP

1	2	3	4	5	6	7												
Port 1	Port 2	Port 3	Valve Series	Seat Material	Seal Material	Body Material												
1A - 1/16" A-LOK® 1Z - 1/16" CPI™ 2A - 1/8" A-LOK® 2Z - 1/8" CPI™ 2F - 1/8" Female NPT 2M - 1/8" Male NPT 4A - 1/4" A-LOK® 4Z - 1/4" CPI™ 4M - 1/4" Male NPT 4Q - 1/4" UltraSeal 4V - 1/4" VacuSeal M3A - 3mm A-LOK® M3Z - 3mm CPI™			B2L	J - PTFE	Blank- PTFE V - Fluorocarbon Rubber													
							B2X	J2 - PCTFE										
									B6L	J - PTFE	EPR - Ethylene Propylene Rubber							
												B6X	J2- PCTFE	BN - Buna-N Rubber				
															PKR - PTFE Reinforced PEEK	LT - Live-Loaded PTFE Packing with PTFE Seals		
																	SPKR - Spring - Loaded PTFE Reinforced PEEK	VLT - Live-Loaded PTFE Packing with Fluorocarbon Rubber Seals
			B8L	J - PTFE														
							B8X	J2 - PCTFE										
										S2 - Spring - Loaded PCTFE								
											PKR - PTFE Reinforced PEEK							

Note: Panel Mounting Nut supplied with each valve. Various port combinations are available – See How to Order.

How to Order

Two-Way Valves

Example: $\frac{4Z}{1}$ $\frac{4F}{2}$ - $\frac{B6L}{4}$ $\frac{J}{5}$ - $\frac{BP}{6}$ $\frac{BP}{7}$

Describes a B6L ball valve with a 1/4" CPI™ end connection for port 1 and a 1/4" female NPT end connection for port 2, PTFE seats, PTFE stem and body seals, brass construction, with a panel mounting nut.

Example: $\frac{8A}{1}$ * $\frac{2}{2}$ - $\frac{B8L}{4}$ $\frac{J}{5}$ - $\frac{BN}{6}$ - $\frac{SSP}{7}$

Describes a B8L ball valve with a 1/2" A-LOK® end connections for ports 1 and 2, PTFE seats, Buna-N rubber stem and body seals, stainless steel construction, with a panel mounting nut. *Note: If ports 1 and 2 are the same, eliminate the port 2 designator.

Example: $\frac{M3A}{1}$ * $\frac{2}{2}$ - $\frac{B2L}{4}$ $\frac{J2}{5}$ - $\frac{VLT}{6}$ - $\frac{SSP}{7}$

Describes a B2L ball valve with 3mm A-LOK® end connections for ports 1 and 2, PCTFE seats, fluorocarbon rubber body seals, live-loaded PTFE packing, stainless steel construction, with a panel mounting nut.

Three-Way Diverter Valves

Example: $\frac{4Z}{1}$ $\frac{4Z}{2}$ $\frac{4F}{3}$ - $\frac{B6X}{4}$ $\frac{J2}{5}$ - $\frac{V}{6}$ - $\frac{BP}{7}$

Describes a B6X ball valve with 1/4" CPI™ end connections for side ports 1 and 2, 1/4" female NPT end connection for bottom port 3, PCTFE seats, fluorocarbon rubber stem and body seals, brass construction, and a panel mounting nut.

Example: $\frac{2Z}{1}$ * $\frac{2}{2}$ $\frac{3}{3}$ - $\frac{B2X}{4}$ $\frac{J}{5}$ - $\frac{SSP}{6}$ $\frac{SSP}{7}$

Describes a B2X ball valve with 1/8" CPI™ end connections for ports 1, 2, and 3, PTFE seats, PTFE stem and body seals, stainless steel construction, and a panel mounting nut. *Note: If ports 1, 2, and 3 are the same, eliminate the port 2 and port 3 designators.

Three-Way Selector Valves

Example: $\frac{4M}{1}$ $\frac{4M}{2}$ $\frac{4F}{3}$ - $\frac{B6X}{4}$ $\frac{S2}{5}$ - $\frac{EPR}{6}$ - $\frac{SSP}{7}$

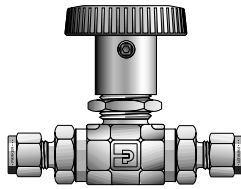
Describes a B6X ball valve with 1/4" male NPT end connections for side ports 1 and 2, 1/4" female NPT end connection for bottom port 3, spring-loaded PCTFE seats, ethylene propylene rubber stem and body seals, stainless steel construction, and a panel mounting nut.

Example: $\frac{8A}{1}$ * $\frac{2}{2}$ $\frac{3}{3}$ - $\frac{B8X}{4}$ $\frac{S2}{5}$ - $\frac{BNLT}{6}$ - $\frac{SSP}{7}$

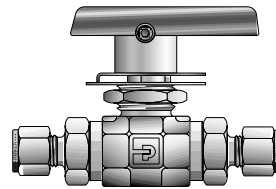
Describes a B8X ball valve with 1/2" A-LOK® end connections for ports 1, 2, and 3, spring-loaded PCTFE seats, Buna-N rubber body seals, live loaded PTFE packing, stainless steel construction, and a panel mounting nut. *Note: If ports 1, 2, and 3 are the same, eliminate the port 2 and port 3 designators.

B Series Ball Valves

Options

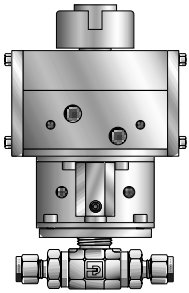


Round Handle

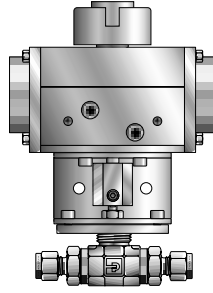


Lock-Out Device

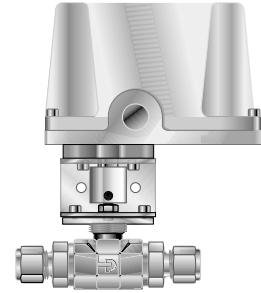
Actuation Options



Double Acting (61AD)
Pneumatic Actuator



Spring Return (61AC & AO)
Pneumatic Actuator



70 and 80 Series
Electric Actuator

Note: When ordering actuated B Series Ball Valves, O-ring stem seals or Live-loaded stem seals are recommended to minimize the need for stem seal maintenance.



O-Ring Stem Seals



Live-loaded Stem Seals

Two-Way Valve Upstream and Downstream Drain Options

For draining upstream or downstream media on two-way valves at pressures below 150 psig (10 bar), add the suffix **-VBU** (Vented Ball Upstream) or **-VBD** (Vented Ball Downstream). Example: 4Z-B6LJ-SSP-**VBU**. This option is also suitable to vent the ball cavity in vacuum applications. For pressures up to 3,000 psig (207 bar), select **S2** or **SPKR** spring-loaded seats and add the suffix **-VBU** (Vented Ball Upstream) or **-VBD** (Vented Ball Downstream). Example: 4Z-B6LS2-SSP-**VBU**

WARNING

FAILURE, IMPROPER SELECTION OR IMPROPER USE OF THE PRODUCTS AND/OR SYSTEMS DESCRIBED HEREIN OR RELATED ITEMS CAN CAUSE DEATH, PERSONAL INJURY AND PROPERTY DAMAGE.

This document and other information from Parker Hannifin Corporation, its subsidiaries and authorized distributors provide product and/or system options for further investigation by users having technical expertise. It is important that you analyze all aspects of your application and review the information concerning the product or system in the current product catalog. Due to the variety of operating conditions and applications for these products or systems, the user, through its own analysis and testing, is solely responsible for making the final selection of the products and systems and assuring that all performance, safety and warning requirements of the application are met.

The products described herein, including without limitation, product features, specifications, designs, availability and pricing, are subject to change by Parker Hannifin Corporation and its subsidiaries at any time without notice.

Offer of Sale

The items described in this document are hereby offered for sale by Parker Hannifin Corporation, its subsidiaries or its authorized distributors. This offer and its acceptance are governed by the provisions stated in the "Offer of Sale" located in Catalog 4110-U Needle Valves (U Series).

© Copyright 2001, Parker Hannifin Corporation. All Rights Reserved.

How to Order Options

Lock-Out Devices – Add the suffix **LD** to the end of the part number to order directly on the valve. Example: 4F-B6LJ2-BN-SSP-**LD**. For field installation, simply substitute the correct valve series number after **LD**. Example: **LD-B8L**.

Colored Lever Handles – Add the designator corresponding to the correct handle as a suffix to the part number (black is standard). **W** – white, **B** – blue, **G** – green, **R** – red, **Y** – yellow. Example: M6A-B6XPKR-SSP-**G**.

Colored Round Handles – Add the designator corresponding to the correct handle as a suffix to the part number. **S**-Black, **S-W** – white, **S-B** – blue, **S-G** – green, **S-R** – red, **S-Y** – yellow. Example: M6A-B6XPKR-SSP-**S-G**. **NOTE:** Round handles are not recommended for B8 valves with PEEK seats.

Metal Oval Handles – Add the designator corresponding to the correct handle as a suffix to the valve part number. **OVSS** - stainless steel, **OVAL** - aluminum. Example: 8F-B8LPKR-SSP-**OVSS**.

Stainless Steel Handles – Add the suffix **-ST** to the end of the part number. Example: 4F-B6LJ-SSP-**ST**

Pneumatic Actuators – For detailed actuator information, refer to Catalog 4123-PA. For factory assembly, add the actuator part number as the suffix to the valve part number. Example: 2F-B2XJ2-V-SSP-**61ACX-2**. For field installation, specify the actuator desired. Example: **61ACX-2**. The appropriate mounting hardware may be obtained by adding the valve series and actuator size to the prefix **MK**-. Example: **MK-B2X-61**.

Electric Actuators – For detailed actuator information refer to Catalog 4123-EA. For factory assembly, add the actuator part number as the suffix to the valve part number. Example: 8A-B8LPKR-BN-SS-**71A**. For field installation, specify the actuator desired. Example: **71A**. The appropriate mounting hardware may be obtained by adding the valve series and actuator series to the prefix **MK**-. Example: **MK-B8L-70**.

Oxygen Cleaning – Add the suffix **-C3** to the end of the part number to receive valves cleaned and assembled for oxygen service in accordance with Parker Specification ES8003. Example: 4A-B6LJ-EPR-SSP-**C3**.

Electron Beam Welded End Connections – For tamper resistant valves, add the suffix **EBW** to the end of the part number of stainless steel valves to have end connections electron beam welded. Example: M6A-B6LSPKR-V-SSP-**EBW**.

Sour Gas – To obtain valves suitable for sour gas service in accordance with NACE Standard MR0175, add the suffix **NACE** to the end of the part number. Example: 8F-B8LJ-BN-SSP-**NACE**.

Grounding Spring – To obtain B8 series valves with a grounding spring, add the suffix **SPG** to the end of the part number. Example: 8A-B8LJ2-SSP-**SPG**.

How to Order Maintenance Kits

Colored Round Handle Kits - Series-Handle-Color. Example: **B6-RD-HANDLE-GREEN** (Consists of a green handle and handle screw)

Stainless Steel Handle Kits: Series-Handle-SS. Example: **B8-HANDLE-SS** (Consists of a stainless steel handle and handle screw)

Colored Lever Handle Kits: Series-Handle-Color. Example: **B6-HANDLE-RED** (Consists of a red handle and handle screw)

Two-way Valve Seal Kits:

PTFE Stem Seal Kits: Kit-Valve Series and Seat Material-Body Material. Example: **KIT-B2LJ-SS**. (Consists of one PTFE stem seal, two stem seal washers, two encapsulated PTFE ball seats, two end connector PTFE seals, one assembly mandrel, maintenance instructions.) **Elastomeric Stem Seal Kits:** Kit-Valve Series and Seat Material-Elastomer Material-Body Material. Example: **KIT-B2LJ2-BN-SS**. (Consists of two stem seal Buna-N rubber O-rings, two stem seal washers, two encapsulated PCTFE ball seats, two end connector Buna-N rubber O-ring seals, two seat retainer Buna-N rubber O-ring seals, maintenance instructions.)

Diverter Valve Seal Kits:

PTFE Stem Seal Kits: Kit-Valve Series and Seat Material-Body Material. Example: **KIT-B6XPKR-SS**. (Consists of one PTFE stem seal, two stem seal washers, two encapsulated PEEK ball seats, three end connector PTFE seals, one assembly mandrel, maintenance instructions.)

Elastomeric Stem Seal Kits: Kit-Valve Series and Seat Material-Elastomer-Body Material. Example: **KIT-B6XJ-V-SS**. (Consists of two stem seal fluorocarbon rubber O-rings, two stem seal washers, two encapsulated PTFE ball seats, three end connector fluorocarbon rubber O-ring seals, two seat retainer fluorocarbon rubber O-ring seals, maintenance instructions.)

Selector Valve Seal Kits:

PTFE Stem Seal Kits: Kit-Valve Series and Seat Material. Example: **KIT-B6XS2**. (Consists of one PTFE stem seal, two stem seal washers, two encapsulated spring-loaded PCTFE ball seats, two seat retainer fluorocarbon rubber O-rings, three end connector PTFE seals, one assembly mandrel, maintenance instructions.)

Elastomeric Stem Seal Kits: Kit-Valve Series and Seat Material-Elastomer. Example: **KIT-B6XSPKR-V**. (Consists of two stem seal fluorocarbon rubber O-rings, two stem seal washers, two encapsulated spring-loaded PEEK ball seat assemblies, three end connector fluorocarbon O-ring seals, two seat retainer fluorocarbon rubber O-rings, maintenance instructions.)

Live-loaded Seal Kits:

Kit-Valve Series and Seat Material-Seal Material-Body Material. Example: **KIT-B6LJ2-BNLT-SS**. (Consists of one live-loaded PTFE stem packing, two packing springs (B8 series valves have four springs), three packing washers, two PCTFE encapsulated ball seats, two Buna-N rubber end connector O-ring seals, two Buna-N rubber seat retainer O-ring seals, maintenance instructions.)



Catalog 4121-B, 20M, 11/01

Parker Hannifin Corporation
Instrumentation Valve Division
2651 Alabama Highway 21 North
Jacksonville, AL 36265-9681
USA
Phone: (256) 435-2130
Fax: (256) 435-7718
www.parker.com/IVD



Parker Hannifin plc
Instrumentation Products Division
Riverside Road
Pottington Business Park
Barnstaple, Devon EX31 1NP
England
Phone: +44 (0) 1271 313131
Fax: +44 (0) 1271 373636
Email: ipd@parker.com
www.parker.com/IPD

