

# **Ball Valves (B Series)**

*Catalog 4121-B  
September 1999*



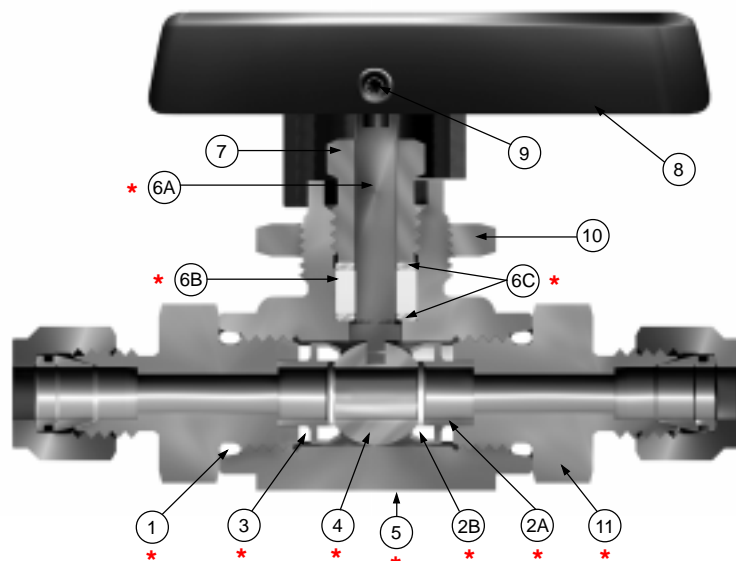
# Two-Way B Series Ball Valves

## 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 400 and Alloy C276 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



Model Shown: 6A-B6LJ-SSP

## Specifications

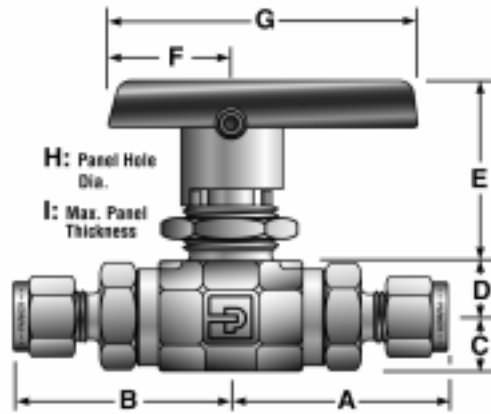
- Pressure Ratings:
  - 316 Stainless Steel**
    - 6000 psig (414 bar)
    - 1500 psig (103 bar) with PTFE seats
  - Brass**
    - 3000 psig (207 bar)
    - 1500 psig (103 bar) with PTFE seats
  - Alloy 400**
    - B2 and B6:
      - 3000 psig (207 bar)
      - 1500 psig (103 bar) with PTFE seats
    - B8:
      - 2000 psig (138 bar)
      - 1500 psig (103 bar) with PTFE seats
  - Alloy C276**
    - B2 and B6:
      - 4000 psig (276 bar)
      - 1500 psig (103 bar) with PTFE seats
    - B8:
      - 3000 psig (207 bar)
      - 1500 psig (103 bar) with PTFE seats

## 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	Brass***
*5	Body	ASTM A 351 Grade CF3M	ASTM B 283 Alloy C37700
*6A	Stem	ASTM A 276 Type 316	ASTM B 371 Alloy C69700***
*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
- \*\*\* The ball and stem are stainless steel for brass B8 ball valves with PCTFE and PEEK seats  
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)							
		Orifice		$C_v$	$X_T^*$	Port 1	Port 2	A†	B†	C	D	E	F	G	H
Inch	mm														
1A	B2L	0.052	1.3	0.06	0.45	1/8" A-LOK®	1.30	1.30	0.33 (8.4)	0.33 (8.4)	1.27 (32.3)	0.75 (19.1)	1.88 (47.8)	0.58 (14.7)	0.13 (3.3)
1Z						1/8" CPI™	(33.0)	(33.0)							
2A						1/8" A-LOK®	1.36	1.36							
2Z						1/8" CPI™	(34.5)	(34.5)							
2F						1/8" Female NPT	1.07	1.07							
							(27.2)	(27.2)							
2M						1/8" Male NPT	1.18	1.18							
							(30.0)	(30.0)							
4A						1/4" A-LOK®	1.48	1.48							
4Z						1/4" CPI™	(37.6)	(37.6)							
4M					1/4" Male NPT	1.35	1.35								
						(34.3)	(34.3)								
4Q					1/4" UltraSeal	1.25	1.25								
						(31.8)	(31.8)								
4V					1/4" VacuSeal	1.38	1.38								
						(35.1)	(35.1)								
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)	2.00 (50.8)	1.00 (25.4)	2.50 (63.5)	0.77 (19.6)	0.25 (6.4)
M3Z						3mm CPI™	(34.8)	(34.8)							
2A						1/8" A-LOK®	1.65	1.65							
2Z						1/8" CPI™	(41.9)	(41.9)							
4A						1/4" A-LOK®	1.74	1.74							
4Z						1/4" CPI™	(44.2)	(44.2)							
4F						1/4" Female NPT	1.51	1.51							
							(38.4)	(38.4)							
4M						1/4" Male NPT	1.62	1.62							
							(41.1)	(41.1)							
4Q					1/4" UltraSeal	1.51	1.51								
						(38.4)	(38.4)								
4V					1/4" VacuSeal	1.75	1.75								
						(44.5)	(44.5)								
6A					3/8" A-LOK®	1.80	1.80								
6Z					3/8" CPI™	(45.7)	(45.7)								
6M					3/8" Male NPT	1.62	1.62								
						(41.1)	(41.1)								
6Q					3/8" UltraSeal	1.51	1.51								
						(38.4)	(38.4)								
M6A	B8L	0.187	4.7	1.04	0.42	6mm A-LOK®	1.75	1.75	0.69 (17.5)	0.70 (17.8)	2.44 (62.0)	1.50 (38.1)	4.00 (101.6)	0.90 (22.9)	0.38 (9.7)
M6Z						6mm CPI™	(44.5)	(44.5)							
M8A						8mm A-LOK®	1.78	1.78							
M8Z						8mm CPI™	(45.2)	(45.2)							
M10A						10mm A-LOK®	1.81	1.81							
M10Z						10mm CPI™	(46.0)	(46.0)							
6F						3/8" Female NPT	1.95	1.95							
							(49.5)	(49.5)							
8F						1/2" Female NPT	2.15	2.15							
							(54.6)	(54.6)							
8A					1/2" A-LOK®	2.34	2.34								
8Z					1/2" CPI™	(59.4)	(59.4)								
8M					1/2" Male NPT	2.22	2.22								
						(56.4)	(56.4)								
8Q					3/8" UltraSeal	1.92	1.92								
						(48.8)	(48.8)								
8V					1/2" VacuSeal	2.21	2.21								
						(56.1)	(56.1)								
12A	B12L	0.406	10.3	6.42	0.37	3/4" A-LOK®	2.33	2.33	0.69 (17.5)	0.70 (17.8)	2.44 (62.0)	1.50 (38.1)	4.00 (101.6)	0.90 (22.9)	0.38 (9.7)
12Z						3/4" CPI™	(59.2)	(59.2)							
M12A						12mm A-LOK®	2.33	2.33							
M12Z						12mm CPI™	(59.2)	(59.2)							
M16A						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  $P_1 - P_2 / P_1 = x_c$

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

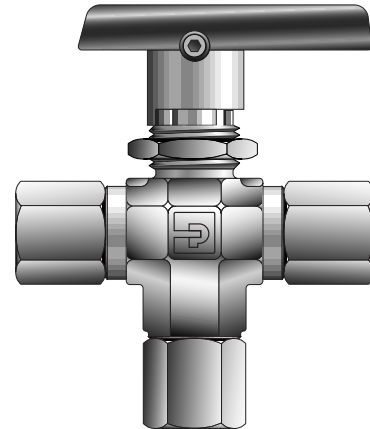
# **Three-Way B Series Ball Valves**

## **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 400 and Alloy C276 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)

1500 psig (103 bar) with PTFE seats

### **Brass**

3000 psig (207 bar)

1500 psig (103 bar) with PTFE seats

### **Alloy 400**

B2 and B6:

3000 psig (207 bar)

1500 psig (103 bar) with PTFE seats

B8:

2000 psig (138 bar)

1500 psig (103 bar) with PTFE seats

### **Alloy C276**

B2 and B6:

4000 psig (276 bar)

B8:

3000 psig (207 bar)

1500 psig (103 bar) with PTFE seats

## **Selector Valve Specifications**

(Spring Loaded – B6 and B8 models only)

- Pressure Rating at all ports:

### **316 Stainless Steel**

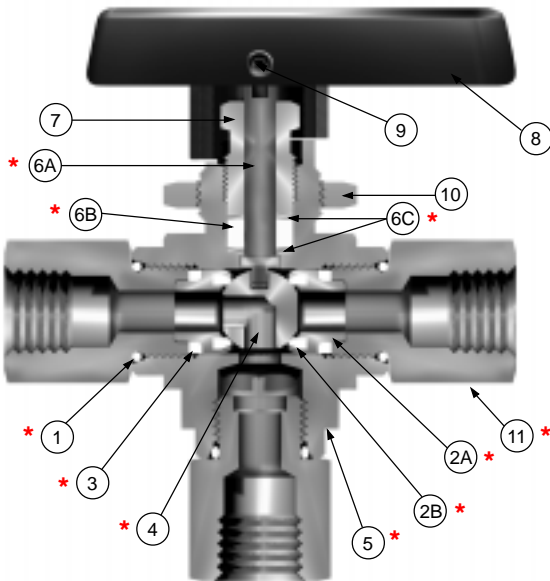
3000 psig (207 bar)

## **Testing**

Standard production testing – Two-way and three-way valves are 100% factory tested at 200 psig (14 bar) for leakage at the seats and body seals. Both areas are required to have less than 2.0 sccm leakage. Optional testing is available upon request. Consult your authorized Parker Instrumentation Distributor or the factory for further information.

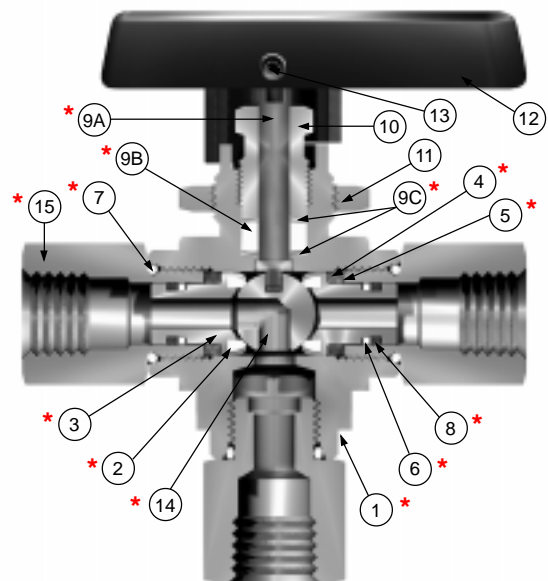
# Three-Way B Series Ball Valves

## 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	Brass***
*5	Body	ASTM A 351 Grade CF3M	ASTM B 283 Alloy C37700
*6A	Stem	ASTM A 276 Type 316	ASTM B 371 Alloy C69700***
*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

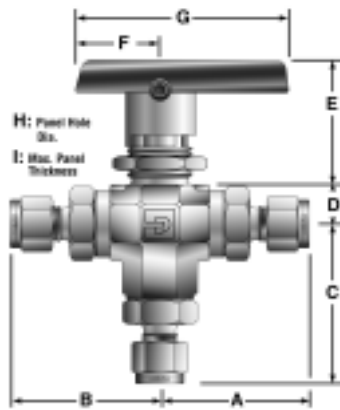
- \* Wetted Parts
- \*\* Optional stem seal and body seal materials are located in the How to Order section
- \*\*\* The ball and stem are 316 stainless steel for B8 brass ball valves with PCTFE and PEEK seats  
Lubrication: Perfluorinated polyether

## Materials of Construction

Item #	Part Description	Stainless Steel
*1	Body	ASTM A 351 Grade CF3M
*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	ASTM A 276 Type 316
*9B	Stem Seal	PTFE*
*9C	Stem Washer	316 Stainless Steel***
10	Packing Nut	ASTM A 479 Type 316
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

- \* 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

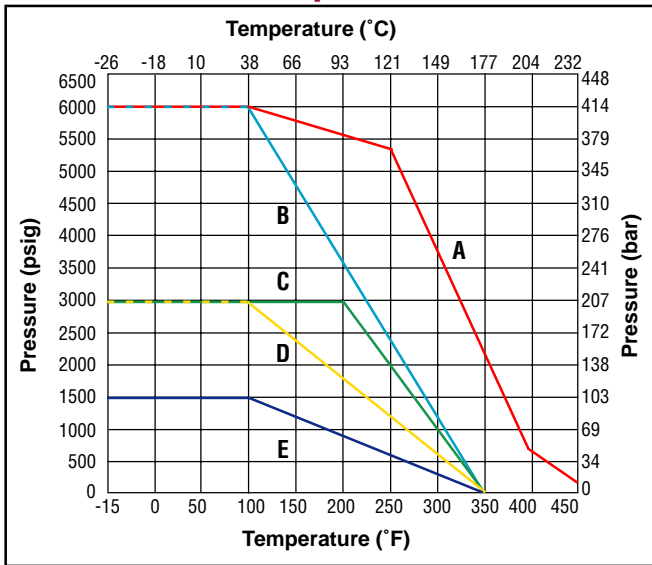
## Three-Way Valve Dimensions / Flow Data

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	I
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)	1.27 (32.3)	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						
									(27.2)	(27.2)	(29.2)						
2M		0.165	4.2	0.63	0.59	1/8" Male NPT			1.18	1.18	1.26						
									(30.0)	(30.0)	(32.0)						
4A		0.165	4.2	0.63	0.59	1/4" A-LOK®			1.48	1.48	1.56						
4Z						1/4" CPI™			(37.6)	(37.6)	(39.6)						
4M	0.165	4.2	0.63	0.59	1/4" Male NPT			1.35	1.35	1.43							
								(34.3)	(34.3)	(36.3)							
4Q	0.165	4.2	0.63	0.59	1/4" UltraSeal			1.25	1.25	1.33							
								(31.8)	(31.8)	(33.8)							
4V	0.165	4.2	0.63	0.59	1/4" VacuSeal			1.38	1.38	1.46							
								(35.1)	(35.1)	(37.1)							
M3A	B6X	0.086	2.2	0.18	0.63	3mm A-LOK®			1.37	1.37	1.45	0.47 (11.9)	2.00 (50.8)	1.00 (25.4)	2.50 (63.5)	0.77 (19.6)	0.25 (6.4)
M3Z						3mm CPI™			(34.8)	(34.8)	(36.8)						
2A		0.093	2.4	0.21	0.38	1/8" A-LOK®			1.65	1.65	1.79						
2Z						1/8" CPI™			(41.9)	(41.9)	(45.5)						
4A		0.187	4.7	0.70	0.69	1/4" A-LOK®			1.74	1.74	1.89						
4Z						1/4" CPI™			(44.2)	(44.2)	(48.0)						
4F		0.196	5.0	0.87	0.74	1/4" Female NPT			1.51	1.51	1.65						
									(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						
									(41.1)	(41.1)	(44.7)						
4Q		0.180	4.6	0.68	0.67	1/4" UltraSeal			1.51	1.51	1.65						
									(31.8)	(31.8)	(33.8)						
4V		0.188	4.8	0.70	0.69	1/4" VacuSeal			1.75	1.75	1.89						
									(35.1)	(35.1)	(37.1)						
6A		0.196	5.0	0.87	0.74	3/8" A-LOK®			1.80	1.80	1.94						
6Z						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						
									(41.1)	(41.1)	(44.7)						
6Q		0.196	5.0	0.87	0.74	3/8" UltraSeal			1.52	1.52	1.65						
									(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	0.406	10.3	3.64	0.54	3/8" Female NPT			1.95	1.95	2.29							
								(49.5)	(49.5)	(58.2)							
8A	0.281	7.1	2.35	0.55	1/2" A-LOK®			2.34	2.34	2.68							
8Z					1/2" CPI™			(59.4)	(59.4)	(68.1)							
8F	0.406	10.3	3.64	0.54	1/2" Female NPT			2.15	2.15	2.49							
								(54.6)	(54.6)	(63.2)							
8M	0.406	10.3	3.64	0.54	1/2" Male NPT			2.22	2.22	2.59							
								(56.4)	(56.4)	(65.8)							
8Q	0.375	9.5	3.46	0.54	1/2" UltraSeal			1.93	1.93	2.27							
								(49.5)	(49.5)	(57.7)							
8V	0.406	10.3	3.64	0.54	1/2" VacuSeal			2.21	2.21	2.55							
								(56.1)	(56.1)	(65.0)							
12A	0.406	10.3	3.64	0.54	3/4" A-LOK®			2.33	2.33	2.68							
12Z					3/4" CPI™			(59.2)	(59.2)	(68.1)							
M12A	0.375	9.5	3.46	0.54	12mm A-LOK®			2.33	2.33	2.67							
M12Z					12mm CPI™			(59.2)	(59.2)	(67.8)							
M16A	0.406	10.3	3.64	0.54	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 use of indicated seat materials with fluorocarbon rubber seals.

When combining seat and seal materials, the most restrictive temperature rating of the elastomer seals becomes the limiting factor on temperature ranges.

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)

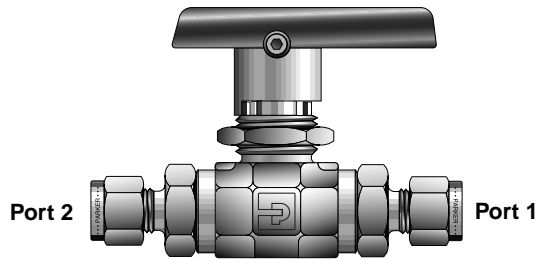
Valve Series	Maximum $C_v$	Pressure Drop $\Delta p$		Water @ 60 °F (16 °C)		Air @ 60 °F (16 °C)	
		psig	bar	gpm	m <sup>3</sup> /hr	scfm	m <sup>3</sup> /hr
B2L	0.93	10	0.7	2.9	0.7	92.4	156.2
		50	3.5	6.6	1.5	200.3	338.3
		100	6.9	9.3	2.1	272.0	458.9
B6L	2.34	10	0.7	7.4	1.7	231.7	391.5
		50	3.5	16.5	3.8	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)

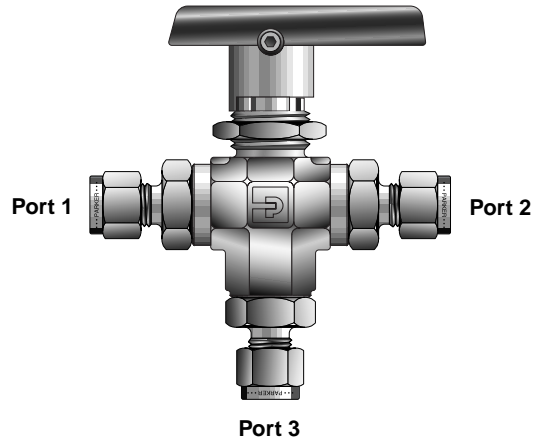
Valve Series	Maximum $C_v$	Pressure Drop $\Delta p$		Water @ 60 °F (16 °C)		Air @ 60 °F (16 °C)	
		psig	bar	gpm	m <sup>3</sup> /hr	scfm	m <sup>3</sup> /hr
B2X	0.63	10	0.7	2.0	0.5	62.7	106.0
		50	3.5	4.5	1.0	137.1	231.7
		100	6.9	6.3	1.4	188.4	317.9
B6X	0.87	10	0.7	2.8	0.6	86.7	146.6
		50	3.5	6.2	1.4	190.5	321.8
		100	6.9	8.7	2.0	263.2	444.4
B8X	3.64	10	0.7	11.5	2.6	362.3	612.3
		50	3.5	25.7	5.8	790.2	1335.1
		100	6.9	36.4	8.3	1082.5	1826.8

# 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  B2X	J - PTFE  J2 - PCTFE	Blank- PTFE  V - Fluorocarbon Rubber	
	2A - 1/8" A-LOK® 2Z - 1/8" CPI™ 4A - 1/4" A-LOK® 4Z - 1/4" CPI™ 4F - 1/4" Female NPT 4M - 1/4" Male NPT 4Q - 1/4" UltraSeal 4V - 1/4" VacuSeal 6A - 3/8" A-LOK® 6Z - 3/8" CPI™ 6M - 3/8" Male NPT 6Q - 3/8" UltraSeal M6A - 6mm A-LOK® M6Z - 6mm CPI™ M8A - 8mm A-LOK® M8Z - 8mm CPI™ M10A - 10mm A-LOK® M10Z - 10mm CPI™		B6L  B6X	J - PTFE  J2- PCTFE  S2 - Spring - Loaded PCTFE  PKR - PTFE Reinforced PEEK  SPKR - Spring - Loaded PTFE Reinforced PEEK	EPR - Ethylene Propylene Rubber  BN - Buna-N Rubber  LT - Live-Loaded PTFE Packing with PTFE Seals  VLT - Live-Loaded PTFE Packing with Fluorocarbon Rubber Seals  EPRLT - Live-Loaded PTFE Packing with Ethylene Propylene Rubber Seals	SSP - 316 Stainless Steel  BP - Brass  MP - Alloy 400  HCP - Alloy C276
	6F - 3/8" Female NPT 8A - 1/2" A-LOK® 8Z - 1/2" CPI™ 8F - 1/2" Female NPT 8M - 1/2" Male NPT 8Q - 1/2" UltraSeal 8V - 1/2" VacuSeal 12A - 3/4" A-LOK® 12Z - 3/4" CPI™ M12A - 12mm A-LOK® M12Z - 12mm CPI™ M16A - 16mm A-LOK® M16Z - 16mm CPI™		B8L  B8X	J - PTFE  J2 - PCTFE  S2 - Spring - Loaded PCTFE  PKR - PTFE Reinforced PEEK	BNLT - Live-Loaded PTFE Packing with Buna-N Rubber Seals	

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

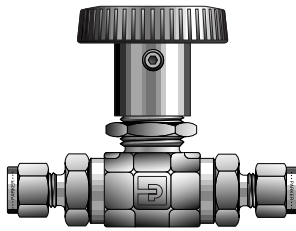
Describes a B6X Ball Valve with 1/4" male NPT end connections for side ports 1 and 2, 1/4" female NPT end connection for bottom port 3, spring-loaded PCTFE seats, ethylene propylene rubber stem and body seals, stainless steel construction, and a panel mounting nut.

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

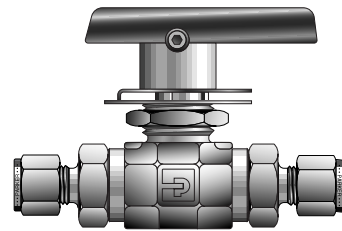
Describes a B8X Ball Valve with 1/2" A-LOK® end connections for ports 1, 2, and 3, spring-loaded PCTFE seats, Buna-N rubber body seals, live loaded PTFE packing, stainless steel construction, and a panel mounting nut. \*Note: If ports 1, 2, and 3 are the same, eliminate the port 2 and port 3 designators.

# B Series Ball Valves

## Options

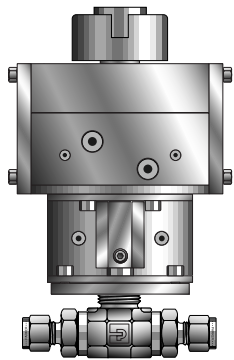


Round Handle

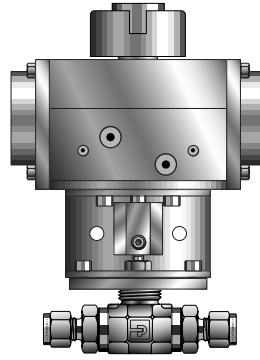


Lock-Out Device

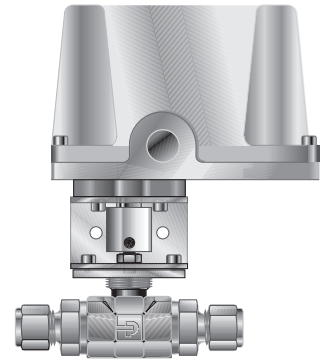
## Actuation Options



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 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**

## 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**.

**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 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.)

### Divertor 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-rings 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.)

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Catalog 4121-B, 10M, 9/99

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