



Ball and Plug Valves

Catalog 4121-BV

January 2019

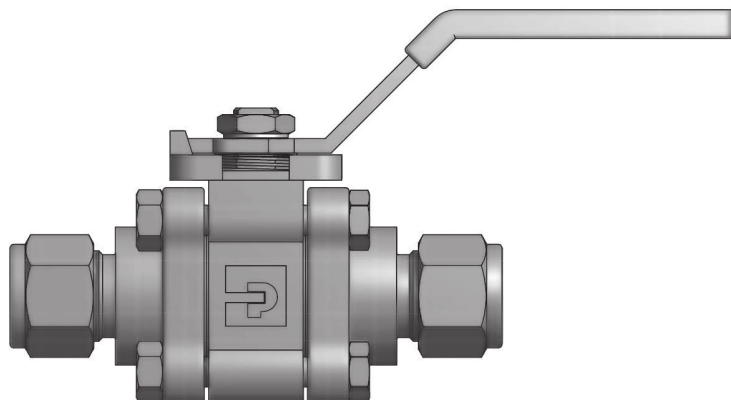
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Introduction

Parker's three-piece SWB Series Ball Valves are durable valves that can handle the pressure and piping loads. The center section can swing out to quickly and easily replace seats, seals and the ball without major disruption to the piping system.



Model Shown: 8Z-SWB8L-RT-BN-SS

SWB

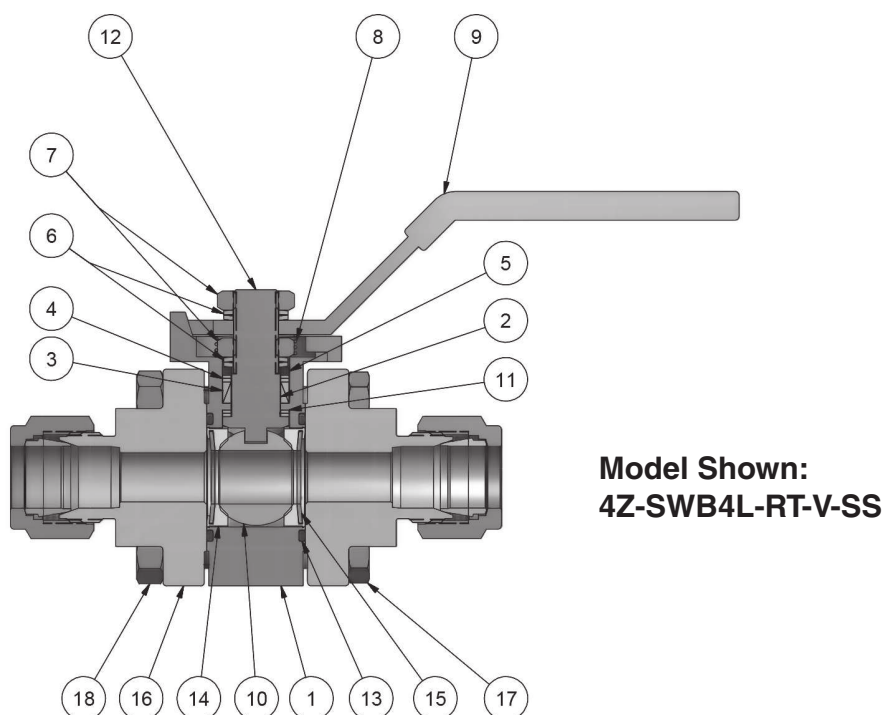
Features

- ▶ Ultra low internal volume
- ▶ Free floating ball design allows for seat wear compensation
- ▶ Self-compensating stem seal
- ▶ Spring-loaded seats
- ▶ Blow out resistant stem
- ▶ Fully enclosed body bolting
- ▶ Four bolt construction
- ▶ ISO-type actuator mounting design
- ▶ Pneumatic and electric actuation options
- ▶ 100% factory tested

Specifications

Body Materials	Stainless Steel
Seat Materials	Reinforced PTFE PEEK
Seal Materials	Nitrile Rubber Ethylene Propylene Rubber Fluorocarbon Rubber PTFE Grafoil®
Flow Data	C _v : 1.1 to 35.0
Pressure Ratings	2500 psig (172 bar) 1500 psig (103 bar) SWB16 with PEEK Seats
Temperature Ratings — Seats	
Reinforced PTFE Seats	-65°F to 450°F (-54°C to 232°C)
PEEK Seats	-65°F to 600°F (-54°C to 316°C)
Temperature Ratings — Seals	
Nitrile Rubber Seals	-40°F to 250°F (-40°C to 121°C)
Ethylene Propylene Rubber Seals	-65°F to 300°F (-54°C to 149°C)
Fluorocarbon Rubber Seals	-15°F to 400°F (-26°C to 204°C)
PTFE Seals	-65°F to 350°F (-54°C to 177°C)
Grafoil® Seals	-65°F to 600°F (-54°C to 316°C)

Materials of Construction



SWB

Materials of Construction

Item #	Part	Qty	Material
1	Body	1	ASTM A 351 Grade CF3M
2	Lower Packing	1	PTFE ¹
3	Upper Packing	1	PTFE ¹
4	Packing Support	2	PEEK
5	Packing Gland	1	ASTM A 276 Type 304
6	Stem Spring	4 ³	ASTM A 666 Type 301
7	Stem Hex Nut	2	ASTM A 276 Type 304
8	Grounding Spring	1	ASTM A 276 Type 304
9	Handle Assembly	1	ASTM A 276 Type 304; Vinyl Covered
10	Ball	1	ASTM A 276 Type 316
11	Thrust Washer	2	PEEK
12	Stem	1	ASTM A 276 Type 316
13	Body Seal	2	Fluorocarbon Rubber ²
14	Seat	2	Reinforced PTFE, PEEK ¹
15	Seat Spring ⁴	2	ASTM A 666 Type 301
16	End Flanges	2	ASTM A 351 Grade CF3M
17	Body Bolts	4	ASTM A 193 Grade B8M Class 2
18	Body Bolt Nuts	4	ASTM A 194 Grade 8M

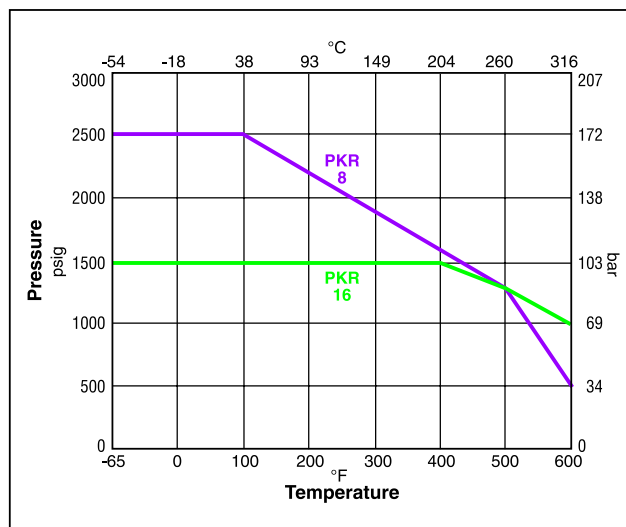
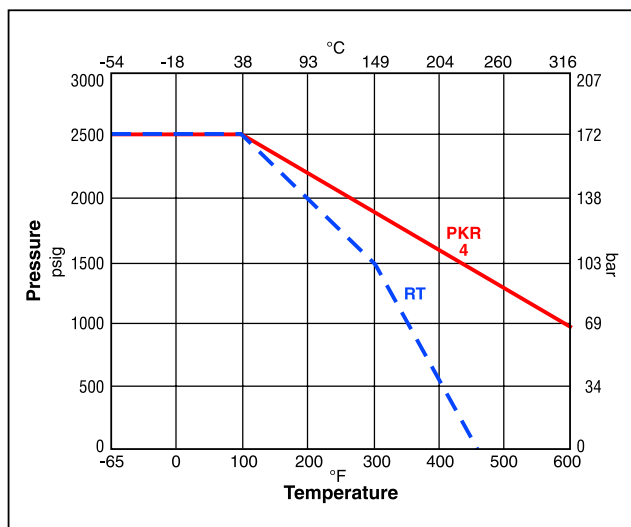
1 Optional Seat and Packing Seal materials are described in the How to Order section.

2 Optional Seal materials are described in the How To Order Section.

3 Size 8 SWB Series Ball Valves only require 3 Stem Springs.

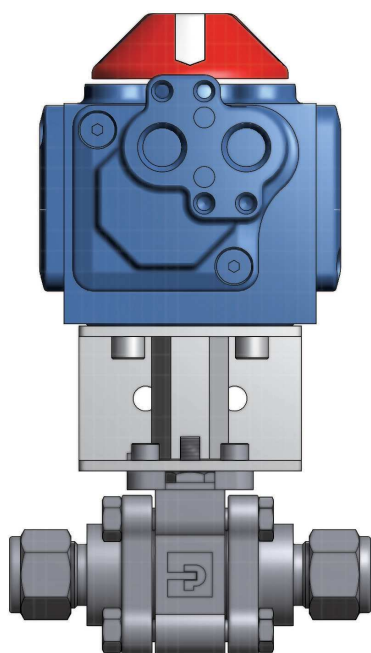
4 PEEK seated SWB Series Ball Valves do not have Seat Springs.

Pressure vs. Temperature

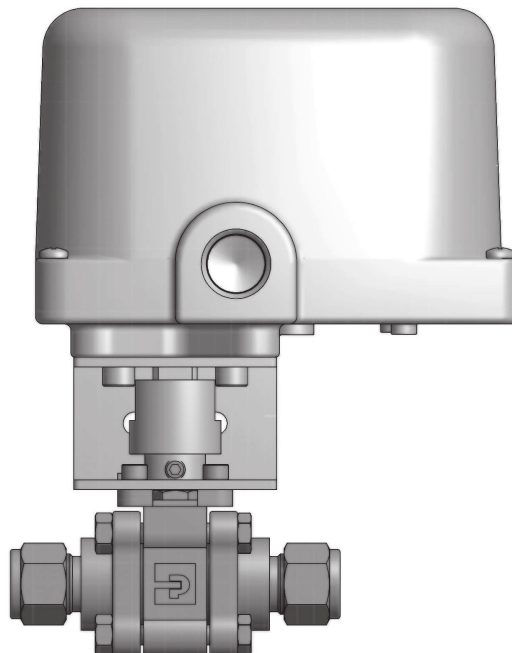


SWB

Note: This Pressure versus Temperature chart reflects the use of indicated seat materials in Stainless Steel valves without consideration of seal materials. When combining seat and seal materials, the most restrictive temperature rating of the seats or seals becomes the limiting factor on temperature range. Please refer to [page 24](#) for seal temperature ranges.

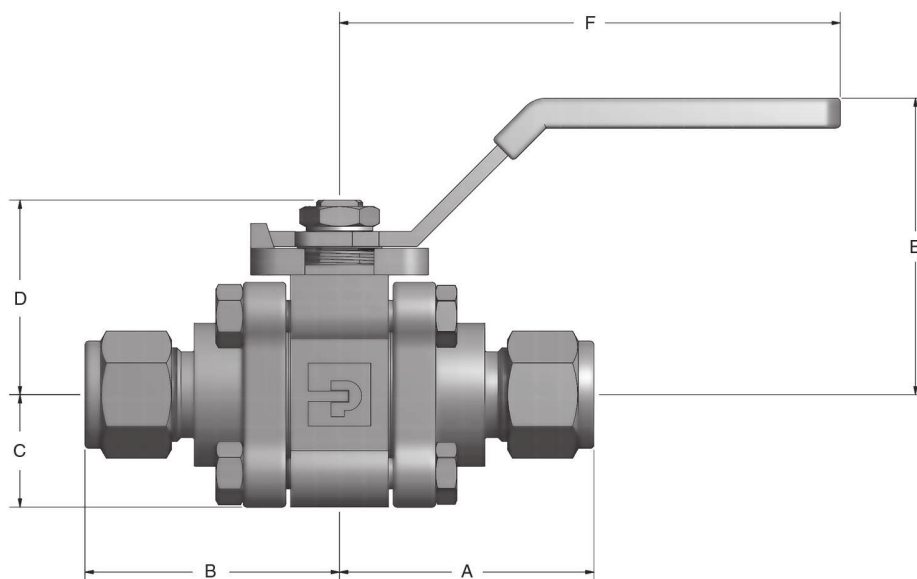


Pneumatic Actuated Model Shown:
8Z-SWB8L-RT-V-SS-51AD



Electric Actuated Model Shown:
8A-SWB8L-RT-V-SS-71

Dimensions / Flow Data



SWB

Basic Part Number	Flow Data				End Connections		Dimensions										
	Orifice		C_V	X_T^*			A†		B†		C		D		E		F
	Inch	mm			Port 1	Port 2	Inch	mm	Inch	mm	Inch	mm	Inch	mm	Inch	mm	Inch
4Z-SWB4L	0.19	4.8	1.1	0.19	CPI™ Tube	1.59	40.4	1.59	40.4	0.68	17.3	1.28	32.5	2.00	50.8	3.00	76.2
4A-SWB4L					A-LOK® Tube												
4F-SWB4L	Female NPT	1.09	27.7	1.09	27.7												
6Z-SWB4L	0.28	7.1	4.5	0.19	CPI™ Tube	1.59	40.4	1.59	40.4								
6A-SWB4L					A-LOK® Tube												
6F-SWB8L	0.44	11.2	8.2	0.35	Female NPT	1.29	32.8	1.29	32.8	0.89	22.6	1.54	39.1	2.36	59.9	3.94	100.1
8Z-SWB8L	0.41	10.4	6.4	0.35	CPI™ Tube	2.03	51.6	2.03	51.6								
8A-SWB8L					A-LOK® Tube												
8F-SWB8L	0.44	11.2	8.2	0.26	Female NPT	1.29	32.8	1.29	32.8								
8W-SWB8L	0.41	10.4	6.4	0.35	Tube Socket Weld	1.29	32.8	1.29	32.8								
8PBW8-SWB8L	0.44	11.2	8.2	0.26	Pipe Buttweld (Schedule 80)	1.35	34.3	1.35	34.3								
8PSW-SWB12L	0.52	13.2	13.5	0.34	Pipe Socket Weld	1.35	34.3	1.35	34.3								
12Z-SWB12L	0.56	14.2	14.7	0.28	CPI™ Tube	2.03	51.6	2.03	51.6								
12A-SWB12L					A-LOK® Tube												
12F-SWB12L	0.56	14.2	14.7	0.28	Female NPT	1.39	35.3	1.39	35.3								
12W-SWB12L	0.56	14.2	14.7	0.28	Tube Socket Weld	1.39	35.3	1.39	35.3								
12PBW8-SWB12L	0.56	14.2	14.7	0.28	Pipe Buttweld (Schedule 80)	1.37	34.8	1.37	34.8								
12PSW-SWB16L	0.88	22.4	35.0	0.29	Pipe Socket Weld	1.95	49.5	1.95	49.5	1.25	31.8	2.30	58.4	3.00	76.2	5.71	145.0
16Z-SWB16L	0.56	14.2	14.7	0.28	CPI™ Tube	2.50	63.5	2.50	63.5								
12A-SWB16L					A-LOK® Tube												
16Z-SWB16L	0.88	22.4	35.0	0.29	CPI™ Tube	2.68	68.1	2.68	68.1								
16A-SWB16L					A-LOK® Tube												
16F-SWB16L	0.88	22.4	35.0	0.29	Female NPT	1.79	45.5	1.79	45.5								
16W-SWB16L	0.88	22.4	35.0	0.29	Tube Socket Weld	1.79	45.5	1.79	45.5								
16PBW8-SWB16L	0.88	22.4	35.0	0.29	Pipe Buttweld (Schedule 80)	1.81	46.0	1.81	46.0								

* 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.

Dimensions in inches/millimeters are for reference only, subject to change.

How to Order

The correct part number is easily derived from the following example and ordering chart. The four product characteristics required are coded as shown in the chart.

The example below describes a SWB8L Two-Way Ball Valve with 1/2" A-LOK® end connections for ports 1 and 2, reinforced PTFE seats, Nitrile rubber body seals, and stainless steel construction.

* **Note:** If ports 1 and 2 are the same, eliminate the port 2 designator.

Example:

8A			SWB8L		RT	BN	SS
Port Size	Port 1*	Port 2*	Valve Series	Valve Configuration	Seat Material		
Port Size	Port 1*	Port 2*	Valve Series	Valve Configuration	Seat Material	Seal Material	Body Material
4	Z	CPI™ Tube	SWB4	L 2-Way	PKR Virgin PEEK ¹	T PTFE	SS Stainless Steel
6	A	A-LOK® Tube	SWB8		RT Glass Reinforced PTFE	BN Nitrile Rubber	
8	F	Female NPT	SWB12			EPR Ethylene Propylene Rubber	
12	W	Tube Socket Weld	SWB16			V Fluorocarbon Rubber	
16	PSW	Pipe Socket Weld				G Grafoil® Gasket ^{1,2}	
	PBW8	Pipe Buttweld (Schedule 80)					

1 Not available in size 12.

2 Grafoil® Seals only available with PEEK Seats.

Note: Upper and Lower PTFE packing is replaced with PEEK when valves are ordered with PEEK Seats.

How to Order Options

Examples

Lever Lock-Out Devices –

Add the suffix -LD to the end of the part number to order directly on the valve.

For field installation, order part number as shown in the example.

4F-SWB8L-RT-V-SS-LD
SWB8/12-HANDLE-LOCKING

Oval Handles – Add the suffix -S to the end of the part number.

8A-SWB8L-RT-T-SS-S

Oval Handle Lock-Out Devices –

Add the suffix -LD to the end of the part number to order directly on the valve.

For field installation, order part number as shown in the example.

6F-SWB8L-RT-V-SS-S-LD
SWB8/12-HANDLE-OVAL-LOCKING

Pneumatic Actuators – For detailed actuator information, refer to the Pneumatic Actuators section of this catalog.

For factory assembly, add the actuator part number as the suffix to the valve part number.

For field installation, specify the the actuator desired.

The appropriate mounting hardware may be obtained by adding the valve series and actuator size to the prefix MK-.

8F-SWB8L-RT-BN-SS-61AC-2
61AC-2
MK-SWB8L-61

Electric Actuators – For detailed actuator information, refer to the Electric Actuators section of this catalog.

For factory assembly, add the actuator part number as the suffix to the valve part number.

For field installation, specify the actuator desired.

The appropriate mounting hardware may be obtained by adding the valve series and actuator series to the prefix MK-.

8A-SWB8L-RT-EPR-SS-71A
71A
MK-SWB8L-70.

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