

SSP

One-Piece Encapsulated Ball Valves



FloLok® EB Series

- ✓ Working Pressure: up to 3000 psig (206 bar)
- ✓ End Connections: 1/16 to 3/4 in. (3 to 12 mm)
- ✓ Temperature Range: -65 to 300°F (-53 to 148°C)
- ✓ 2-way, Angle and 3-way valves
- ✓ Flow Coefficient: up to 13.8
- ✓ Extremely Low Dead Space

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At SSP, we are proud to be an American manufacturing success story.

100% of our products are made in America. All of our manufacturing is performed in our 165,000 sq. ft. facility located near Cleveland, Ohio. Our facility is the largest vertically integrated, single-site operation in the industry. In addition to manufacturing and assembly, we have closed die forging, tool & die design, product development and testing operations under the same roof with the customer service and executive teams.

Made in America is good business. Not only do we make everything in America, we use American suppliers too. Buying American allows us to have better quality control and a more reliable supply chain. We can work more closely within our walls and with our suppliers to improve quality, reduce costs, and shorten lead times, which means faster service and better products for you.

SSP Taking Industry Standard Products
and Making Them Better

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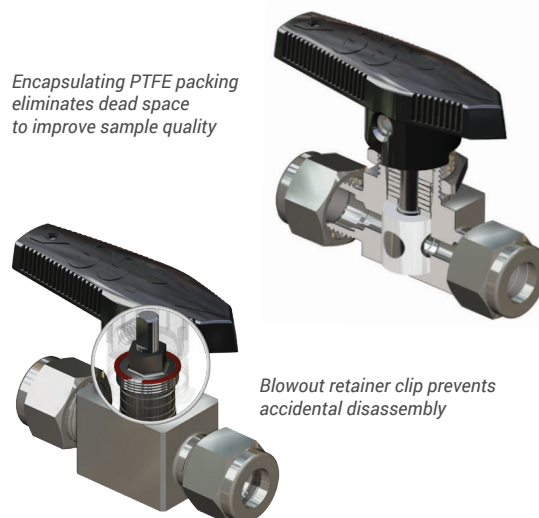
EB Series One-Piece Encapsulated Ball Valves

FloLok® EB Series ball valves offer important improvements for the most popular valve design used in analytical instrumentation and other medium pressure applications. These include:

- The industry's first blowout proof stem standard design prevents accidental disassembly for improved safety
- Forged 316 Stainless Steel increases the structural integrity of the body
- One-piece packing encapsulates the trunnion-style ball eliminating dead space to maximize purgeability for clean and accurate samples - *available in all sizes*
- Drop-in fit design allows for easy replacement of Swagelok® 40 Series valves

General Specifications

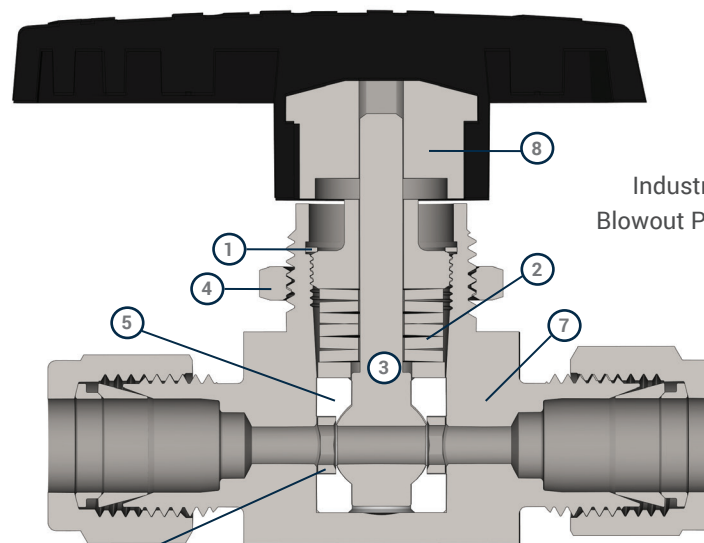
FEATURE	SPECIFICATION
Body Materials	Forged 316 Stainless Steel, Brass
Packing Materials	Modified PTFE
Working Pressure	Up to 3000 psig (206 bar)
Temperature Range	-65 to 300°F (-53 to 148°C)
Flow Coefficient	0.8 to 12.0
End Connection Sizes	1/16 to 3/4 in.
Flow Patterns	2-way and Angle Shutoff and 3-way Switching/Shut Off Valves. Special patterns for venting, purging, sampling and other functions are available.



Applications

With an extended temperature range, low dead space, and the ability to seal at both high and low pressures, EB Series valves are suitable for a wide variety of instrumentation systems. They are widely used in the analytical instrumentation sampling and conditioning systems where clean and accurate sampling can have significant impact on product quality, process efficiency and productivity. In addition, EB Series ball valves can be used in process and equipment applications, such as painting, coating, filling and additive systems, where rapid and thorough cleaning and purging are required.

Features & Benefits



Industry First
Blowout Proof Stem



Drop-in fit design allows for easy replacement of Swagelok® 40 Series valves

- 1 INDUSTRY FIRST BLOWOUT PROOF STEM**

 - Prevents accidental disassembly for improved safety and meets the most stringent safety standards including MSS SP-110
- 2 LIVE LOADED PACKING**

 - Reduces need for packing adjustments
 - Packing is adjustable in-line. No special tools or adapters required
 - Compensates for seat wear
 - Improves performance in dynamic temperature applications
- 3 ONE-PIECE TRUNNION-STYLE BALL AND STEM**

 - Ensures alignment of ball in orifice
 - Reduces seat wear
 - Straight flow path allows cleaning and purging
- 4 PANEL MOUNTABLE**
- 5 ENCAPSULATED ONE-PIECE PACKING IN ALL SIZES**

 - Eliminates dead space
 - Reduces number of leak points
 - Leak-tight from vacuum to maximum pressure
- 6 SUPPORT RINGS AND DISCS**

 - Protect packing
 - Reduce packing extrusion
- 7 ONE-PIECE FORGED BODY WITH INTEGRAL END CONNECTIONS**

 - Matches Swagelok's 40 Series end-to-end dimensions
 - Reduces the number of potential leak paths
 - No end connections to loosen or O-rings to maintain
 - Forged body improves grain structure
- 8 DURABLE DIRECTIONAL HANDLE**

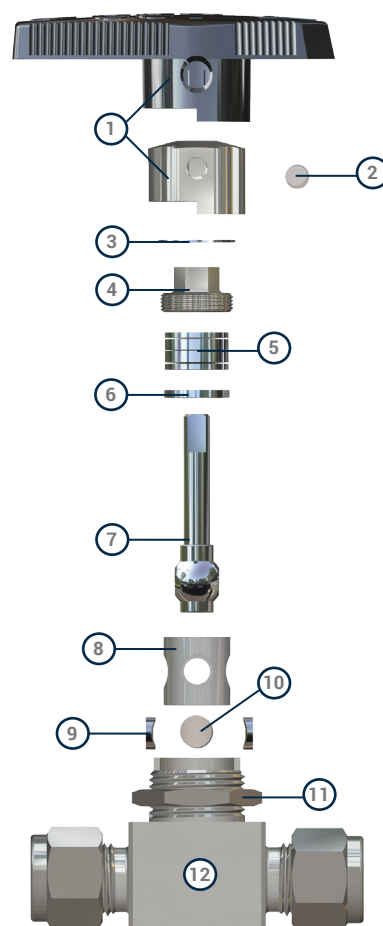
 - Nylon handle with 316 stainless steel insert enhances strength and compatibility
 - Handle and stem flats indicate flow direction
 - Colored handles available

Meets ASME B31.1 and B31.3 design pressure calculations

Materials of Construction

ID	COMPONENT	MATERIAL	SPECIFICATION
1	Handle	Nylon with SS insert	
2	Set Screw	Stainless Steel	A276
3	Retaining Clip	302 SS	
4	Packing Bolt	Powdered Metal 316 SS	B783
5	Springs	S17700	A693
6	Gland	316 SS	A276
7*	Ball Stem	316 SS	A276
8*	Packing	Modified PTFE	D1710
9*	Side Rings	Powdered Metal 316 SS	B783
10*	Side Discs	Powdered Metal 316 SS	B783
11	Panel Nut	Powdered Metal 316 SS	B783
12*	Body	316 SS / Brass	A182/B283
	Wetted Lubricant	Silicone-Based	
	Nonwetted Lubricant	Molybdenum disulfide	

* Wetted components

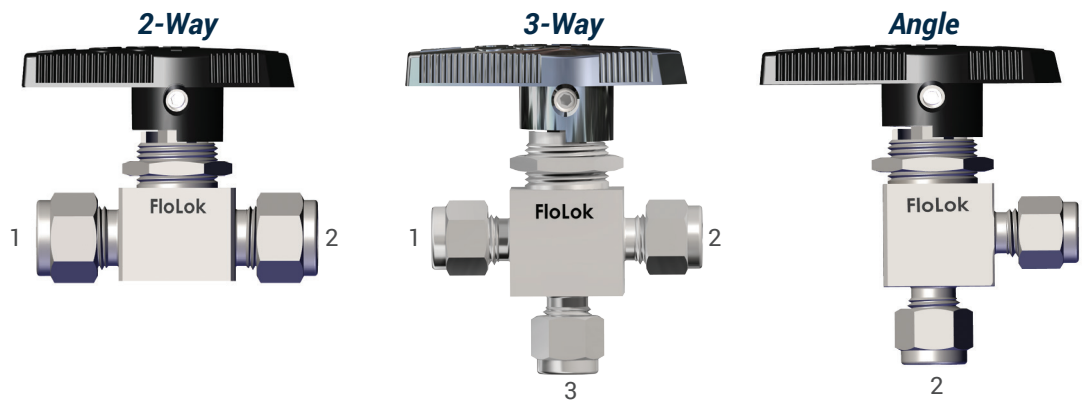


Temperature Pressure Tables

The table provides temperature ratings for both process and environmental temperatures.

SIZE	41	42	43		44/45	
Configuration	Straight/Angle/ 3-way	Straight/Angle/ 3-way	Straight	Angle/3-way	Straight	Angle/ 3-way
Temperature	Working Pressure - psig (bar)					
-65 to 150° F (-53 to 65° C)	2500 (172)	2500 (172)	3000 (206)	2500 (172)	2500 (172)	1500 (103)
200°F (93°C)	2500 (172)	2500 (172)	2800 (193)	2500 (172)	-	-
250°F (121°C)	2500 (172)	2500 (172)	2650 (183)	2500 (172)	-	-
300°F (148°C)	2500 (172)	2500 (172)	2500 (172)	2500 (172)	-	-

Ordering Information



Ordering Instructions

Ordering EB Series valves requires the following steps:

- ① Locate the Basic Ordering Number & Dimensions table for the valve flow pattern.
*Example: **Angle Pattern Valves** (see page 9).*
- ② Locate the Basic Ordering Number for the valve end connection type(s) and size(s) and the Cv.
*Example: **43GAD4***

Notes:

a. End connections are designated in the part numbers according to the diagrams above.

Example: 43GXD4D44PM-316. Connections 1 are 2 are ¼ in. Duolok tube ends. Connection 3 is a ¼ in. Male NPT pipe end.

b. **Other Configurations:** The Basic Ordering Number tables contain only the most popular valve configurations. To configure valves with mixed end connection types and sizes, see the Special Orders Table – on page 14. *Example: 43GXD44PFD6*

c. **Other Tube Fitting Designs:** The Basic Ordering Numbers for tube fitting end connections specify Duolok end connections. For Unilok and Griplok end connections, see the Tube Fitting End Connection options – on page 10. *Example: 43GAU4*

- ③ Locate and add the Body Material Designator to the part number – on page 10. *Example: 43GAD4-316*
- ④ Add designators for other options (pages 10-13) as shown in the instructions for each option.

Note: For configurations that are not in the catalog see the Special Order Instructions available on page 14.

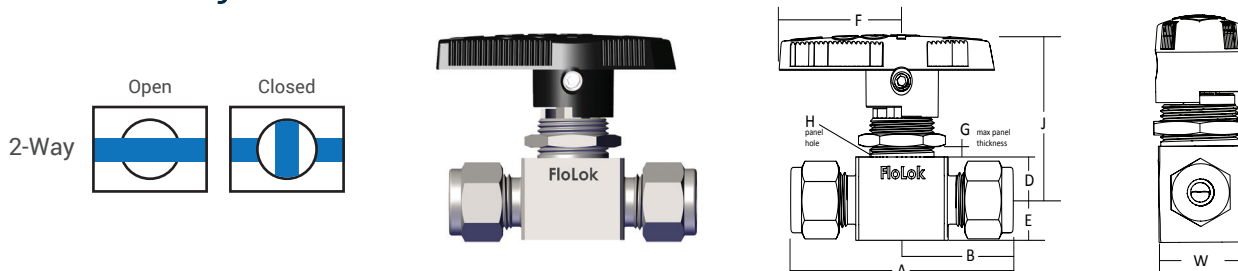


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Note: The Part Number and Dimensions tables contain the most common valve configurations. Use the Special Order table on page 14 to specify the end connection type and size combinations and options to meet the requirements of your applications. Dimensions are subject to change.

Part Numbers and Dimensions

Two-Way Ball Valves



END CONNECTION			BASIC ORDERING NUMBER	ORIFICE IN. (MM)	CV	DIMENSIONS IN. (MM)								
TYPE	INLET SIZE	OUTLET SIZE				A	B	D	E	F	G	H	J	W
Fractional Tube Fitting	1/16	1/16	41GD1	0.052 (1.32)	0.10	1.68 (42.7)	0.84 (21.3)	0.34 (8.6)	0.28 (7.1)	1.09 (27.7)	1/4 (6.4)	19/32 (15.1)	1.45 (36.8)	0.58 (14.7)
	1/8	1/8	41GD2	0.093 (2.36)	0.20	2.01 (51.1)	1.01 (25.7)	0.34 (8.6)	0.28 (7.1)	1.09 (27.7)	1/4 (6.4)	19/32 (15.1)	1.45 (36.8)	0.58 (14.7)
	1/4	1/4	42GD4	0.125 (3.18)	0.60	2.21 (56.1)	1.10 (27.9)	0.34 (8.6)	0.28 (7.1)	1.09 (27.7)	1/4 (6.4)	19/32 (15.1)	1.45 (36.8)	0.58 (14.7)
	1/4	1/4	43GD4	0.187 (4.75)	1.4	2.39 (60.7)	1.20 (30.5)	0.44 (11.2)	0.38 (9.7)	1.43 (36.3)	3/16 (4.8)	25/32 (19.8)	1.53 (38.9)	0.78 (19.8)
	3/8	3/8	43GD6	0.187 (4.75)	1.5	2.58 (65.5)	1.29 (32.8)	0.44 (11.2)	0.38 (9.7)	1.43 (36.3)	3/16 (4.8)	25/32 (19.8)	1.53 (38.9)	0.78 (19.8)
	3/8	3/8	44GD6	0.281 (7.14)	6.0	3.05 (77.5)	1.52 (38.6)	0.56 (14.2)	0.56 (14.2)	1.86 (47.2)	3/8 (9.5)	1 1/8 (28.6)	2.10 (53.3)	1.12 (28.4)
	1/2	1/2	45GD8	0.406 (10.3)	12.0	3.92 (99.6)	1.96 (49.8)	0.69 (17.5)	0.69 (17.5)	3.02 (76.7)	3/8 (9.5)	1 1/2 (38.1)	2.57 (65.3)	1.50 (38.1)
	3/4	3/4	45GD12	0.406 (10.3)	6.4	3.92 (99.6)	1.96 (49.8)	0.69 (17.5)	0.69 (17.5)	3.02 (76.7)	3/8 (9.5)	1 1/2 (38.1)	2.57 (65.3)	1.50 (38.1)
Metric Tube Fitting	3 mm	3 mm	41GDM3	0.093 (2.36)	0.20	2.01 (51.1)	1.01 (25.7)	0.34 (8.6)	0.28 (7.1)	1.09 (27.7)	1/4 (6.4)	19/32 (15.1)	1.45 (36.8)	0.58 (14.7)
	6 mm	6 mm	42GDM6	0.125 (3.18)	0.60	2.21 (56.1)	1.10 (27.9)	0.34 (8.6)	0.28 (7.1)	1.09 (27.7)	1/4 (6.4)	19/32 (15.1)	1.45 (36.8)	0.58 (14.7)
	6 mm	6 mm	43GDM6	0.187 (4.75)	1.4	2.39 (60.7)	1.20 (30.5)	0.44 (11.2)	0.38 (9.7)	1.43 (36.3)	3/16 (4.8)	25/32 (19.8)	1.53 (38.9)	0.78 (19.8)
	8 mm	8 mm	43GDM8	0.187 (4.75)	1.5	2.46 (62.5)	1.23 (31.2)	0.44 (11.2)	0.38 (9.7)	1.43 (36.3)	3/16 (4.8)	25/32 (19.8)	1.53 (38.9)	0.78 (19.8)
	10 mm	10 mm	44GDM10	0.281 (7.14)	6.0	3.07 (78)	1.53 (38.9)	0.56 (14.2)	0.56 (14.2)	1.86 (47.2)	3/8 (9.5)	1 1/8 (28.6)	2.10 (53.3)	1.12 (28.4)
	12 mm	12 mm	45GDM12	0.406 (10.3)	12.0	3.92 (99.6)	1.96 (49.8)	0.69 (17.5)	0.69 (17.5)	3.02 (76.7)	3/8 (9.5)	1 1/2 (38.1)	2.57 (65.3)	1.50 (38.1)
Female NPT	1/8	1/8	42G2PF	0.125 (3.18)	0.50	1.63 (41.4)	0.81 (20.6)	0.34 (8.6)	0.28 (7.1)	1.09 (27.7)	1/4 (6.4)	19/32 (15.1)	1.45 (36.8)	0.58 (14.7)
	1/8	1/8	43G2PF	0.187 (4.75)	1.2	2.00 (50.8)	1.00 (25.4)	0.44 (11.2)	0.38 (9.7)	1.43 (36.3)	3/16 (4.8)	25/32 (19.8)	1.53 (38.9)	0.78 (19.8)
	1/4	1/4	43G4PF	0.187 (4.75)	0.90	2.06 (52.3)	1.03 (26.2)	0.44 (11.2)	0.38 (9.7)	1.43 (36.3)	3/16 (4.8)	25/32 (19.8)	1.53 (38.9)	0.78 (19.8)
	1/4	1/4	44G4PF	0.281 (7.14)	3.0	2.50 (63.5)	1.25 (31.8)	0.56 (14.2)	0.56 (14.2)	1.86 (47.2)	3/8 (9.5)	1 1/8 (28.6)	2.10 (53.3)	1.12 (28.4)
	3/8	3/8	44G6PF	0.281 (7.14)	2.6	2.50 (63.5)	1.25 (31.8)	0.56 (14.2)	0.56 (14.2)	1.86 (47.2)	3/8 (9.5)	1 1/8 (28.6)	2.10 (53.3)	1.12 (28.4)
	1/2	1/2	45G8PF	0.406 (10.3)	6.3	3.12 (79.2)	1.56 (39.6)	0.69 (17.5)	0.69 (17.5)	3.02 (76.7)	3/8 (9.5)	1 1/2 (38.1)	2.57 (65.3)	1.50 (38.1)
Male NPT	1/4	1/4	43G4PM	0.187 (4.75)	1.2	2.00 (50.8)	1.00 (25.4)	0.44 (11.2)	0.38 (9.7)	1.43 (36.3)	3/16 (4.8)	25/32 (19.8)	1.53 (38.9)	0.78 (19.8)
Male NPT to Fractional Tube Fitting	1/4	1/4	43G4PMD4	0.187 (4.75)	0.75	2.20 (55.9)	1.20 (30.5)	0.44 (11.2)	0.38 (9.7)	1.43 (36.3)	3/16 (4.8)	25/32 (19.8)	1.53 (38.9)	0.78 (19.8)
Female ISO Tapered	1/4	1/4	43G4FRT	0.187 (4.75)	0.90	2.06 (52.3)	1.03 (26.2)	0.44 (11.2)	0.38 (9.7)	1.43 (36.3)	3/16 (4.8)	25/32 (19.8)	1.53 (38.9)	0.78 (19.8)
	3/8	3/8	44G6FRT	0.281 (7.14)	2.6	2.50 (63.5)	1.25 (31.8)	0.56 (14.2)	0.56 (14.2)	1.86 (47.2)	3/8 (9.5)	1 1/8 (28.6)	2.10 (53.3)	1.12 (28.4)
	1/2	1/2	45G8FRT	0.406 (10.3)	6.3	3.12 (79.2)	1.56 (39.6)	0.69 (17.5)	0.69 (17.5)	3.02 (76.7)	3/8 (9.5)	1 1/2 (38.1)	2.57 (65.3)	1.50 (38.1)

07

Ordering Information

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Part Numbers and Dimensions

Three-Way Ball Valves



END CONNECTION			BASIC PART NUMBER	ORIFICE IN. (MM)	CV	DIMENSIONS IN. (MM)								
TYPE (SIDES/BOTTOM)	BOTTOM	SIDES				A	B	C	D	F	G	H	J	W
Fractional Tube Fitting	1/16	1/16	41GXD1	0.052 (1.32)	0.08	1.68 (42.7)	0.84 (21.3)	0.81 (20.6)	0.34 (8.6)	1.09 (27.7)	1/4 (6.4)	19/32 (15.1)	1.45 (36.8)	0.58 (14.7)
	1/8	1/8	41GXD2	0.093 (2.36)	0.15	2.01 (51.1)	1.01 (25.7)	0.97 (24.6)	0.34 (8.6)	1.09 (27.7)	1/4 (6.4)	19/32 (15.1)	1.45 (36.8)	0.58 (14.7)
	1/4	1/4	42GXD4	0.125 (3.18)	0.35	2.21 (56.1)	1.10 (27.9)	1.07 (27.2)	0.34 (8.6)	1.09 (27.7)	1/4 (6.4)	19/32 (15.1)	1.45 (36.8)	0.58 (14.7)
	1/4	1/4	43GXD4	0.187 (4.75)	0.90	2.39 (60.7)	1.20 (20.6)	1.17 (29.7)	0.44 (11.2)	1.43 (36.3)	3/16 (4.8)	25/32 (19.8)	1.53 (38.9)	0.78 (19.8)
	3/8	3/8	44GXD6	0.281 (7.14)	2.0	2.89 (73.4)	1.45 (36.8)	1.43 (36.3)	0.56 (14.2)	1.86 (47.2)	3/8 (9.7)	1 1/8 (28.7)	2.10 (53.3)	1.12 (28.4)
	1/2	1/2	45GXD8	0.406 (10.3)	4.6	3.48 (88.4)	1.74 (44.2)	1.74 (44.2)	0.69 (17.5)	3.02 (76.7)	3/8 (9.7)	1 1/2 (38.1)	2.57 (65.3)	1.50 (38.1)
	3/4	3/4	45GXD12	0.406 (10.3)	3.8	3.48 (88.4)	1.74 (44.2)	1.74 (44.2)	0.69 (17.5)	3.02 (76.7)	3/8 (9.7)	1 1/2 (38.1)	2.57 (65.3)	1.50 (38.1)
Metric Tube Fitting	3 mm	3 mm	41GXDM3	0.093 (2.36)	0.15	2.01 (51.1)	1.01 (25.7)	0.97 (24.6)	0.34 (8.6)	1.09 (27.7)	1/4 (6.4)	19/32 (15.1)	1.45 (36.8)	0.58 (14.7)
	6 mm	6 mm	42GXDM6	0.125 (3.18)	0.35	2.21 (56.1)	1.10 (27.9)	1.07 (27.2)	0.34 (8.6)	1.09 (27.7)	1/4 (6.4)	19/32 (15.1)	1.45 (36.8)	0.58 (14.7)
	6 mm	6 mm	43GXDM6	0.187 (4.75)	0.90	2.39 (60.7)	1.20 (20.6)	1.17 (29.7)	0.44 (11.2)	1.43 (36.3)	3/16 (4.8)	25/32 (19.8)	1.53 (38.9)	0.78 (19.8)
	8 mm	8 mm	43GXDM8	0.187 (4.75)	0.80	2.46 (62.5)	1.23 (31.2)	1.20 (30.5)	0.44 (11.2)	1.43 (36.3)	3/16 (4.8)	25/32 (19.8)	1.53 (38.9)	0.78 (19.8)
	10 mm	10 mm	44GXDM10	0.281 (7.14)	2.0	2.89 (73.4)	1.45 (36.8)	1.43 (36.3)	0.56 (14.2)	1.86 (47.2)	3/8 (9.7)	1 1/8 (28.7)	2.10 (53.3)	1.12 (28.4)
	12 mm	12 mm	45GXDM12	0.406 (10.3)	4.6	3.48 (88.4)	1.74 (44.2)	1.74 (44.2)	0.69 (17.5)	3.02 (76.7)	3/8 (9.7)	1 1/2 (38.1)	2.57 (65.3)	1.50 (38.1)
Female NPT	1/8	1/8	42GX2PF	0.125 (3.18)	0.30	1.63 (41.4)	0.81 (20.6)	0.81 (20.6)	0.34 (8.6)	1.09 (27.7)	1/4 (6.4)	19/32 (15.1)	1.45 (36.8)	0.58 (14.7)
	1/4	1/4	43GX4PF	0.187 (4.75)	0.75	2.06 (52.3)	1.03 (26.2)	1.03 (26.2)	0.44 (11.2)	1.43 (36.3)	3/16 (4.8)	25/32 (19.8)	1.53 (38.9)	0.78 (19.8)
	1/4	1/4	44GX4PF	0.281 (7.14)	1.7	2.50 (63.5)	1.25 (31.8)	1.25 (31.8)	0.56 (14.2)	1.86 (47.2)	3/8 (9.7)	1 1/8 (28.7)	2.10 (53.3)	1.12 (28.4)
	3/8	3/8	44GX6PF	0.281 (7.14)	1.5	2.50 (63.5)	1.25 (31.8)	1.25 (31.8)	0.56 (14.2)	1.86 (47.2)	3/8 (9.7)	1 1/8 (28.7)	2.10 (53.3)	1.12 (28.4)
	1/2	1/2	45GX8PF	0.406 (10.3)	3.5	3.13 (79.5)	1.56 (39.6)	1.56 (39.6)	0.69 (17.5)	3.02 (76.7)	3/8 (9.7)	1 1/2 (38.1)	2.57 (65.3)	1.50 (38.1)
Male NPT to Fractional Tube Fitting	1/4	1/4	43GXD4D44PM	0.187 (4.75)	0.80	2.39 (60.7)	1.20 (30.5)	1.03 (26.2)	0.44 (11.2)	1.43 (36.3)	3/16 (4.8)	25/32 (19.8)	1.53 (38.9)	0.78 (19.8)



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Part Numbers and Dimensions Angle Pattern Ball Valves



END CONNECTION			BASIC ORDERING NUMBER	ORIFICE IN. (MM)	CV	DIMENSIONS IN. (MM)							
TYPE	INLET SIZE	OUT-LET SIZE				B	C	D	F	G	H	J	W
Fractional Tube Fitting	1/8	1/8	41GAD2	0.093 (2.36)	0.15	1.01 (25.7)	0.97 (24.6)	0.34 (8.6)	1.09 (27.7)	1/4 (6.4)	19/32 (15.1)	1.45 (36.8)	0.58 (14.7)
	1/4	1/4	42GAD4	0.125 (3.18)	0.35	1.10 (27.9)	1.07 (27.2)	0.34 (8.6)	1.09 (27.7)	1/4 (6.4)	19/32 (15.1)	1.45 (36.8)	0.58 (14.7)
	1/4	1/4	43GAD4	0.187 (3.18)	0.90	1.20 (30.5)	1.17 (29.7)	0.44 (11.2)	1.43 (36.3)	3/16 (4.8)	25/32 (19.8)	1.53 (38.9)	0.78 (19.8)
	3/8	3/8	43GAD6	0.187 (3.18)	0.90	1.29 (32.8)	1.29 (32.8)	0.44 (11.2)	1.43 (36.3)	3/16 (4.8)	25/32 (19.8)	1.53 (38.9)	0.78 (19.8)
	3/8	3/8	44GAD6	0.281 (7.14)	2.0	1.52 (38.6)	1.43 (36.3)	0.56 (14.2)	1.86 (47.2)	3/8 (9.5)	1 1/8 (28.6)	2.10 (53.3)	1.12 (28.4)
	1/2	1/2	45GAD8	0.406 (10.3)	4.6	1.96 (49.8)	1.74 (44.2)	0.69 (17.5)	3.02 (76.7)	3/8 (9.5)	1 1/2 (38.1)	2.57 (65.3)	1.50 (38.1)
Metric Tube Fitting	3 mm	3 mm	41GADM3	0.093 (2.36)	0.15	1.01 (25.7)	0.97 (24.6)	0.34 (8.6)	1.09 (27.7)	1/4 (6.4)	19/32 (15.1)	1.45 (36.8)	0.58 (14.7)
	6 mm	6 mm	42GADM6	1.25 (3.18)	0.35	1.10 (27.9)	1.07 (27.2)	0.34 (8.6)	1.09 (27.7)	1/4 (4.8)	25/32 (19.8)	1.45 (36.8)	0.58 (14.7)
	6 mm	6 mm	43GADM6	0.187 (4.75)	0.90	1.20 (30.5)	1.17 (29.7)	0.44 (11.2)	1.43 (36.3)	3/16 (4.8)	25/32 (19.8)	1.53 (38.9)	0.78 (19.8)
	8 mm	8 mm	43GADM8	0.187 (4.75)	0.90	1.23 (31.2)	1.20 (30.5)	0.44 (11.2)	1.43 (36.3)	3/16 (4.8)	25/32 (19.8)	1.53 (38.9)	0.78 (19.8)
	10 mm	10 mm	44GADM10	0.281 (7.14)	2.00	1.53 (38.9)	1.43 (36.3)	0.56 (14.2)	1.86 (47.2)	3/8 (9.5)	1 1/8 (28.6)	2.10 (53.3)	1.12 (28.4)
	12 mm	12 mm	45GADM12	0.406 (10.3)	4.6	1.96 (49.8)	1.74 (44.2)	0.69 (17.5)	3.02 (76.7)	3/8 (9.5)	1 1/2 (38.1)	2.57 (65.3)	1.50 (38.1)
Female NPT	1/8	1/8	42GA2PF	0.125 (3.18)	0.30	0.81 (20.6)	0.81 (20.6)	0.34 (8.6)	1.09 (27.7)	1/4 (6.4)	19/32 (15.1)	1.45 (36.8)	0.58 (14.7)
	1/8	1/8	43GA2PF	0.125 (3.18)	0.70	1.00 (25.4)	1.00 (25.4)	0.44 (8.6)	1.43 (36.3)	3/16 (4.8)	25/32 (19.8)	1.53 (38.9)	0.78 (19.8)
	1/4	1/4	43GA4PF	0.187 (4.75)	0.75	1.03 (26.2)	1.03 (26.2)	0.44 (11.2)	1.43 (36.3)	3/16 (4.8)	25/32 (19.8)	1.53 (38.9)	0.78 (19.8)
	1/4	1/4	44GA4PF	0.281 (7.14)	1.7	1.25 (31.8)	1.25 (31.8)	0.56 (14.2)	1.86 (47.2)	3/8 (9.5)	1 1/8 (28.6)	2.10 (53.3)	1.12 (28.4)
	3/8	3/8	44GA6PF	0.281 (7.14)	1.5	1.25 (31.8)	1.25 (31.8)	0.56 (14.2)	1.86 (47.2)	3/8 (9.5)	1 1/8 (28.6)	2.10 (53.3)	1.12 (28.4)
	1/2	1/2	45GA8PF	0.406 (10.3)	3.5	1.56 (39.6)	1.56 (39.6)	0.69 (17.5)	3.02 (76.7)	3/8 (9.5)	1 1/2 (38.1)	2.57 (65.3)	1.50 (38.1)
Male NPT	1/4	1/4	43GA4PM	0.187 (4.75)	0.75	1.00 (25.4)	1.03 (28.2)	0.44 (11.2)	1.43 (36.3)	3/16 (4.8)	25/32 (19.8)	1.53 (38.9)	0.78 (19.8)
Male NPT to Fractional Tube Fitting	1/4	1/4	43GA4PMD4	0.187 (4.75)	0.75	1.2 (30.5)	1.03 (26.2)	0.44 (11.2)	1.43 (36.3)	3/16 (4.8)	25/32 (19.8)	1.53 (38.9)	0.78 (19.8)



Options & Accessories

Tube Fitting End Connections

SSP can provide three tube fitting designs for all FloLok valves without changing the end-to-end dimensions of the valve. Use the designators below to indicate the required design. For more information about SSP end connection designs see our other tube fitting catalogs. *Example: 43PU4-316 for Unilok tube fitting end connections.*

DESIGN	DESCRIPTION	DESIGNATOR
Duolok	2-Ferrule	D
Unilok	1-Ferrule	U
Griplok	2-Ferrule	G

Body Material

Select the valve body material required then add the designator to the valve basic part number. *Example: 43GAD4-316*

MATERIAL	DESIGNATOR
316 Stainless Steel	-316
Brass	-B

Handle Options

Stainless steel reinforced black nylon handles are standard on EB Series ball valves. To select other handle options, add the designator from the table below to the basic part number. *Example: 43GAD4-316-RD*

HANDLE COLOR	DESIGNATOR
Black	None
Green	-GR
Red	-RD
Blue	-BL
Yellow	-YW
Orange	-OG
No Handle	-NH

Vented Valves

2-WAY VALVES

The downstream port vents to atmosphere through a vent hole in the side of the valve body when the valve is closed.

ANGLE PATTERN AND 3-WAY VALVES

The bottom port vents to atmosphere through a vent hole in the side of the valve body when the valve is closed.

VENTED VALVE PRESSURE RATING

The pressure rating for vented valves is 500 psig (34.4 bar).

ORDERING VENTED VALVES

To order vented valves, add V after the flow pattern designator. *Example: 42GXVD4-316*

Important: To prevent cross-vent flow, order a vented valve with a smaller vent orifice by adding the designator from the table below to the part number.

Example: 42GXVD4-316-040

VALVE SIZE	ORIFICE IN. (MM)	DESIGNATOR
41, 42	0.040 (1.02)	-040
43, 44, 45	0.049 (1.24)	-049
45	0.093 (2.36)	-093

Special Cleaning

Special cleaned EB Series ball valves are available with oxygen compatible lubricant and with no lubrication. To specify special cleaning, add the designator from the table below to the part number. *Example: 43GAD4-316-RD-XP98* **Note:** Valves with no lubricant have a pressure rating of 500 psig (34.4 bar). Valves with oxygen compatible lubricant are rated to -30°F.

DESCRIPTION	DESIGNATOR
Oxygen compatible lubricant	-XP98
No Lube	-XP97

Actuator Brackets & Couplings

Actuator brackets and couplings are available for ISO 5211 compliant actuators. Actuator kits contain the actuator bracket, coupling and cap screws required to install the actuator bracket and connect to the actuator.

VALVE SIZE	ISO 5211 FLANGE SIZE	COUPLING TYPE	CAP SCREW TYPE	BRACKET KIT ORDERING NUMBER	VALVE SIZE	ISO 5211 FLANGE SIZE	COUPLING TYPE	CAP SCREW TYPE	BRACKET KIT ORDERING NUMBER	
41/42	F03	9 mm ISO	Metric	41-MB-F03-9ISO-M	44	F03	9 mm ISO	Metric	44-MB-F03-9ISO-M	
			Fractional	41-MB-F03-9ISO-F				Fractional	44-MB-F03-9ISO-F	
		9 mm DIN	Metric	41-MB-F03-9DIN-M			9 mm DIN	Metric	44-MB-F03-9DIN-M	
			Fractional	41-MB-F03-9DIN-F				Fractional	44-MB-F03-9DIN-F	
	F04	9 mm ISO	Metric	41-MB-F04-9ISO-M		F04	11 mm ISO	Metric	44-MB-F04-11ISO-M	
			Fractional	41-MB-F04-9ISO-F				Fractional	44-MB-F04-11ISO-F	
		9 mm DIN	Metric	41-MB-F04-9DIN-M			11 mm DIN	Metric	44-MB-F04-11DIN-M	
			Fractional	41-MB-F04-9DIN-F				Fractional	44-MB-F04-11DIN-F	
		11 mm ISO	Metric	41-MB-F04-11ISO-M		F05	11 mm ISO	Metric	44-MB-F05-11ISO-M	
			Fractional	41-MB-F04-11ISO-F				Fractional	44-MB-F05-11ISO-F	
		11 mm DIN	Metric	41-MB-F04-11DIN-M			11 mm DIN	Metric	44-MB-F05-11DIN-M	
			Fractional	41-MB-F04-11DIN-F				Fractional	44-MB-F05-11DIN-F	
43	F03	9 mm ISO	Metric	43-MB-F03-9ISO-M	45	F05	11 mm ISO	Metric	45-MB-F05-11ISO-M	
			Fractional	43-MB-F03-9ISO-F				Fractional	45-MB-F05-11ISO-F	
		9 mm DIN	Metric	43-MB-F03-9DIN-M			11 mm DIN	Metric	45-MB-F05-11DIN-M	
			Fractional	43-MB-F03-9DIN-F				Fractional	45-MB-F05-11DIN-F	
	F04	9 mm ISO	Metric	43-MB-F04-9ISO-M			14 mm ISO	Metric	45-MB-F05-14ISO-M	
			Fractional	43-MB-F04-9ISO-F				Fractional	45-MB-F05-14ISO-F	
		9 mm DIN	Metric	43-MB-F04-9DIN-M				14 mm DIN	Metric	45-MB-F05-14DIN-M
			Fractional	43-MB-F04-9DIN-F					Fractional	45-MB-F05-14DIN-F
		11 mm ISO	Metric	43-MB-F04-11ISO-M		17 mm ISO	Metric	45-MB-F05-17ISO-M		
			Fractional	43-MB-F04-11ISO-F			Fractional	45-MB-F05-17ISO-F		
		11 mm DIN	Metric	43-MB-F04-11DIN-M			17 mm DIN	Metric	45-MB-F05-17DIN-M	
			Fractional	43-MB-F04-11DIN-F				Fractional	45-MB-F05-17DIN-F	
	F05	11 mm ISO	Metric	43-MB-F05-11ISO-M	17 mm ISO	Metric	45-MB-F07-17ISO-M			
			Fractional	43-MB-F05-11ISO-F		Fractional	45-MB-F07-17ISO-F			
		11 mm DIN	Metric	43-MB-F05-11DIN-M	17 mm DIN	Metric	45-MB-F07-17DIN-M			
			Fractional	43-MB-F05-11DIN-F		Fractional	45-MB-F07-17DIN-F			
		14 mm ISO	Metric	43-MB-F05-14ISO-M	17 mm ISO	Metric	45-MB-F07-17ISO-M			
			Fractional	43-MB-F05-14ISO-F		Fractional	45-MB-F07-17ISO-F			
		14 mm DIN	Metric	43-MB-F05-14DIN-M	17 mm DIN	Metric	45-MB-F07-17DIN-M			
			Fractional	43-MB-F05-14DIN-F		Fractional	45-MB-F07-17DIN-F			

Actuation Torque

Use the table below to select the correct actuator for the valve and application. Listed is minimum required actuator torque at maximum system pressure. Valves with packings adjusted for less than maximum system pressure will require less torque.

VALVE SIZE	ACTUATION TORQUE, 2-WAY/3-WAY IN.-LBS.
41	20
42	20
43	40
44	80
45	150



Actuated assemblies must be properly aligned and supported. Improper alignment or inadequate support of the actuated assembly may result in leakage or premature valve failure.

Special Flow Paths

EB Series ball valves are available with special flow paths to accommodate sampling, draining, purging, tee flow and other applications. See page 12 for special flow path options.

Replacement Handles

Replacement handles can be ordered by using the replacement part number table below. Replacement handles are shipped with the stainless steel insert and set screw installed. *Note: For Black replacement handles use a -BK designator. Designators for other colors are listed in the handle options on page 10. Example: NY-7K-44-BK*

HANDLE COLOR	BASE PART NUMBER
41, 42	NY-7K-42-XX
43	NY-7K-43-XX
44	NY-7K-44-XX
45	NY-7K-45-XX

Locking Devices

Factory installed locking handle hardware can be added to any size valve by adding -LD to the part number.

Example: 44GD4-316-LD.

Locking handle kits for field installation can be ordered using the part numbers in the table below.



VALVE SIZE	PART NUMBER
41, 42	42-LDK-316
43	43-LDK-316
44	44-LDK-316
45	45-LDK-316

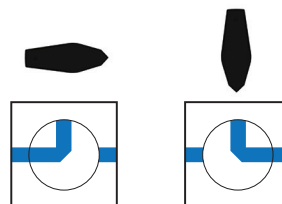
Special Flow Path Ordering Information

Below are EB Series ball valve special flow path options for 2-way and 3-way ball valves. To order special flow paths, select the flow path designator from the tables below, then place the designator after the G in the basic ordering number. *Note: See the important Cross-Port Flow Warning on the bottom of page 13 for information about ordering special flow paths. Add the port sizes to the part number if required.*

Examples: 2-way Valve: 43GLD4-316
3-way Valve: 43GXTFD4-316

2-Way Sampling Transfer

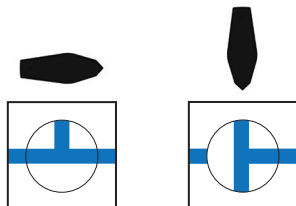
The valve isolates then transfers a small sample as the valve rotates 90° to transfer the sample to the opposite port. **Designator: L.**



SIZE	ORIFICE IN./MM	FLOW PATH VOLUME IN. ³ /CM ³	WORKING PRESSURE PSIG/BAR	DESIGNATOR
41	0.040 1.02	0.0004 0.007	2500 172	L
42	0.047 1.19	0.0005 0.008		
43	0.062 1.57	0.0013 0.021		
44	0.125 3.18	0.0073 0.120	1500 103	
45	0.281 7.14	0.0473 0.775		

2-Way Valve Drain/Purge

The valve may drain through the downstream port when the valve is in the off position. **Designator: DP.**



SIZE	ORIFICE IN./MM	WORKING PRESSURE PSIG/BAR	DESIGNATOR
41	0.093 2.36	2500 172	DP
42	0.125 3.18		
43	0.187 4.75		
44	0.281 7.14	1500 103	
45	0.406 10.3		

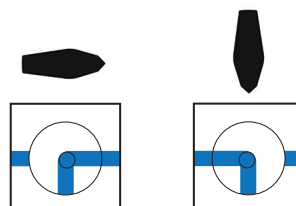
IMPORTANT: CROSS-PORT FLOW WARNING

Cross-port flow may occur in two- and three-port valves with L, DP, XQS, XTF, and XTS flow paths and orifices larger than 0.049 in. (1.24 mm).

To prevent cross-port flow in valve sizes 41, 42 and 43, specify a smaller orifice by adding -049 to the part number. For sizes 44 and 45 add -093 to the part number. *Example: 45GXTFD4-316-093*

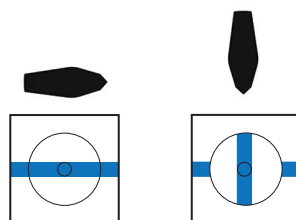
3-Way Quarter Turn Switching

Switching can be achieved in a quarter turn. Flow cannot be shut off in this configuration. **Designator: XQS.**



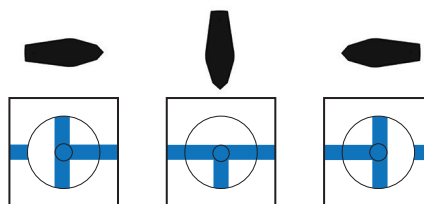
3-Way Tee Flow On/Off

Tee flow can be switched on and off in a quarter turn. **Designator: XTF.**



3-Way Tee Flow Switching

The valve can be switched from tee flow to individual ports in one quarter turn from full flow. This configuration cannot be shut off. **Designator: XTS.**



SIZE	ORIFICE IN./MM	WORKING PRESSURE PSIG/BAR	DESIGNATOR
41	0.093 2.36	2500 172	XQS - Quarter Turn Switching
42	0.125 3.18		
43	0.187 4.75		
44	0.281 7.14	1500 103	XTS - 3-way Tee Flow Switching
45	0.406 10.3		



Special Orders

The Basic Ordering Numbers and Dimensions tables (pages 7-9) contain only the most popular valve configurations; many more are available. If the required valve configuration is not in the Basic Ordering Numbers and Dimensions tables, use the chart below to build part numbers for quotation purposes.

(basic ordering number) (options)

A B C D E F G H
43 G X V D4 4PM -316 -GR

A BODY / ORIFICE SIZE

- 41 0.093, 0.053* in.
- 42 0.125 in.
- 43 0.187 in.
- 44 0.281 in.
- 45 0.406 in.

B PACKING

- G PTFE

C BODY / FLOW PATH

- Blank 2 way
 - L 2-way Sample Transfer
 - DP 2-way Drain/Purge
 - A Angle
 - X 3-way
 - XQS Quarter Turn Switching
 - XTF 3-way Tee Flow
 - XTS 3-way Tee Flow Switching
- See instructions on Page 12.

D VENTED VALVES

- V Atmosphere
- See Vent Size options.

G BODY MATERIAL

- 316 316 Stainless Steel
- B Brass

H OPTIONS¹

HANDLES

- (Blank) Black
- GR Green
- RD Red
- BL Blue
- YW Yellow
- OG Orange
- NH No Handle

LOCKING DEVICES

- LD

SPECIAL CLEANING

- XP97 No Lube
- XP98 Oxygen compatible lubricant, per ASTM G93, Level C and CGA G-4.1

VENT SIZE

- 040
- 049
- 093

Note: For vented valves indicate V in the base part number. See D. See instruction for selecting vent sizes on Page 10.

E + F INLET TYPE² + OUTLET TYPE²

		Fractional Sizes:	Metric Sizes:
D	Duolok® Tube Fitting	1	1/16 in. M6 6 mm
U	Unilok® Tube Fitting	2	1/8 in. M8 8 mm
G	Griplok® Tube Fitting	4	1/4 in. M10 10 mm
PF	Female NPT	6	3/8 in. M12 12 mm
PM	Male NPT	8	1/2 in.
MRT	Male ISO Tapered	12	3/4 in.
FRT	Female ISO Tapered		

¹ Add options designators to the end of the Base Part Number in alphabetical order.

² Tube end connection part numbers are formatted "Type" followed by "Size." Example: D6.

Pipe end connections are formatted "Size" followed by "Type." Example: 6PF

*1/16 tube fitting end connections reduce the opening to 0.052 in.

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Important Information

! IMPROPER SELECTION OR IMPROPER USE OF THE PRODUCTS DESCRIBED HEREIN OR RELATED ITEMS CAN CAUSE PERSONAL INJURY AND PROPERTY DAMAGE. It is the sole responsibility of the system designers and users to properly select and use products for their specific applications. This document has been provided to users with technical expertise as a reference for further investigation to determine specific product needs relative to their design requirements.

! EB series ball valves should only be used in the full on or full off position. Throttling may damage the valve.

! Packing adjustments are required for applications with working pressure higher than 1000 psig (69 bar) or if the valves have been exposed to high or low temperatures prior to installation. Instructions for packing adjustments are included with each valve.

! Valves that have not been actuated for extended periods of time may require greater actuation torque.

Testing

All EB series valves are factory tested with Nitrogen to 1000 psig (69 bar) at 70°F (20°C). Note: Packing adjustments are required for applications with higher pressures and in applications with higher or lower process or environmental temperature.

Warranty

FloLok valves are backed by the SSP Limited Life Time Warranty. This warranty is available from your local distributor or at www.mySSPusa.com.

More SSP Products



Tube Fittings

Duolok and Griplok two-ferrule and Unilok® single ferrule tube fittings provide leak-tight installation even when intermixed with Swagelok®, Hoke Gyrolok® and Parker CPI™ fittings.



Valves

The FloLok valve offering includes ball, check, metering, needle, toggle, plug, bleed, and purge valves for pressures up to 10,000 psig.



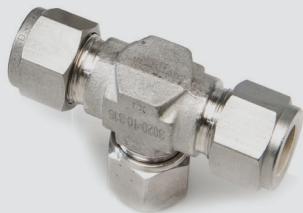
Tubing

SSP offers straight and coiled seamless 316 stainless steel instrumentation tubing for instrumentation, process and utility applications.



Pipe Fittings

TruFit and TruFit 10K pipe fittings are available in a wide range of weld, threaded and flared connections.



Filters

FloLok in-line and tee-type filters trap particles to clean sample fluids and protect sensitive process and analytical instrumentation components and equipment.



Hose

TruFit PTFE-lined and flexible metal core hose assemblies are used in a variety of instrumentation, utility, biopharm and other applications.



Tools & Accessories

SSP TurnPro professional hand tools, power tools and installation training make quality tube system installation faster and easier.



Quick Connects

SSP offers single-end shutoff, double-end shutoff, and full-flow quick connects for instrumentation and process applications.

SSP

Founded 1926 • Privately owned, third generation family business • Modern manufacturing facility –
165,000 square feet • Captive closed die forging operation • Integrated tool & die production
Nearly 200 machining centers • ISO 17025 testing laboratory • Automated warehouse retrieval system
ISO 9001 quality management system • \$20,000,000 product liability insurance policy • DFARS-com-
pliant raw material • EN 10204 3.1 certification • Limited Lifetime Warranty • ASME B31.3 design
Canadian Registration Number OA98665 • Third Party Approvals from CSA, TÜV, DNV, and ABS



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