



## A Series Pneumatic Actuators

- ☒ ISO 5211 Compliant
- ☒ 90° and 180° Actuators
- ☒ Standard and Custom Assemblies
- ☒ Solenoids , limit switches, position sensors and other accessories



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

**100% of our products are made in America.** All of our manufacturing and assembly 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 engineering and testing operations under the same roof with customer service and management.

**Made in America is good business.** Not only do we make everything in America, we take extraordinary measures to use American suppliers whenever possible. 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.

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# Actuated Ball Valve Assemblies

SSP will provide assembled automated valve packages for SSP EB, FB and TB series ball valves. Actuators are available in 90° and 180° double acting, spring to open, spring to close and spring to center actions with a wide variety of solenoids, limits switches, position sensors and other accessories to meet your applications' requirements. Packages are engineered from components selected specifically for each valve. SSP can also provide packages with customer-specified actuators, solenoids, limit switches and other components.

## Why Choose SSP Automated Valve Assemblies

SSP provides actuated ball valve assemblies for SSP EB, TB and FB Series ball valves. SSP assemblies are:

- Fast - SSP has many of the most commonly used components ready for assembly and shipment.
- Single source - SSP stands behind the entire assembly including the valve, hardware, and accessories.
- Reliable - Whether your assembly is built with standard or custom components, all automation components and accessories are selected to maximize the performance of the valve. All assemblies are factory tested to ensure that they function as expected.
- Flexible - SSP can locate components to meet the unique needs of your application or provide automated valves assembled with customer specified actuators and accessories.



# Product Features

SSP offers a variety of options for automated valve assemblies. SSP can help you specify options that will enable your actuated assembly to meet the performance requirements of your application. Features include:

- Compact Size
- 90° and 180° dual acting and spring return actuation including a variety of 3-way flow path options
- Single and dual mounted valve assemblies
- Variety of anodized and corrosion proof coated aluminum and stainless steel housings
- High temperature and low temperature actuated assemblies available
- Wide range of solenoids, limit switches, brackets and other accessories
- Custom assemblies available
- Lifetime Limited Warranty



# Actuator Technical Information

Component	Specifications			
	Standard	High Temperature	Low Temperature	Super-Low Temperature
	Material			
Housing	Anodized Aluminum			
Pinion	Nickel Plated Carbon Steel			
Endcaps & Piston	Epoxy Coated Die Cast Aluminum			
Fasteners	304 Stainless Steel			
Spring Cartridges	Epoxy Coated Steel w/ Technopolymer Cartridge			
Skates & Wear Bearings	Technopolymer			
O-rings	NBR (-4 TO 176°F)	FKM (-10 to 300°F/ 350°F cyclic)	NBR (-40 to 212°F) VMQ (-49 to 300°F/ 350°F cyclic)	FVMQ (-67 to 300°F/ 350°F cyclic)
ISO 5211 Mounting Bracket & Coupling	316 Stainless Steel			
Operating Pressure	60 to 120 PSIG			
Max Pressure Rating	150 PSIG			
Valve Mounting	ISO 5211			
Accessory Mounting	NAMUR VDI/VDE 3845			

# Actuator Technical Information

## Weight & Air Consumption

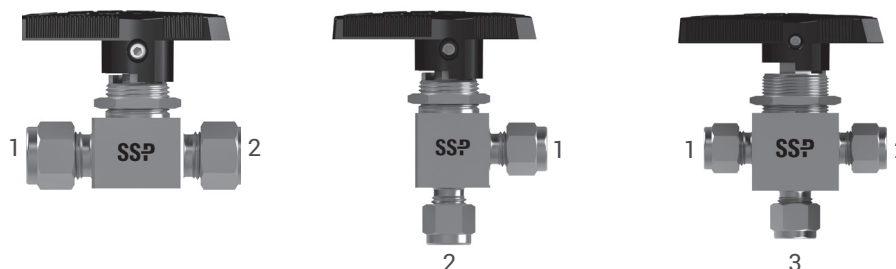
Actuator Model	Double Acting		Spring Return	
	Weight (lbs)	Air Consumption (cu-in)	Weight (lbs)	Air Consumption (cu-in)
AM10	1.06	4.03	N/A	N/A
AM15	2.00	13.50	2.18	8.00
AM20	2.76	15.26	3.00	6.10
AM25	3.52	25.60	3.94	11.20
AM35	5.17	44.40	6.00	18.10

## Ordering Information

Below are ordering instructions for the SSP valve automation program. SSP has access to many suppliers of actuators and valve automation accessories. If you require specific actuators and accessories for your valve automation packages please contact your authorized SSP instrumentation distributor or SSP Customer Service at [CustomerService@mySSP.com](mailto:CustomerService@mySSP.com).

### Port Numbering

Ordering instructions throughout this catalog will refer to the port numbers in this illustration.



## Ordering Instructions

- 1 Select the valve ordering number from the valve catalog. *Example: 43GD4-316*
- 2 Locate the Actuator Selection Table for the valve series you wish to actuate (see pages 6 - 9) and select the actuator based on the valve size, and actuation mode. Add the designator to the valve part number *Example: 43GD4-316-AM15NO2* (see page 6 under 43 spring return, normally open actuators).
- 3 Add any options to the actuator designator (see page 10). *Example: 43GD4-316-AM15NO2HT* for high temperature actuators.
- 4 If required, select a solenoid type from the Solenoid Selection Table on page 11, then add the designator to the part number.  
*Example: 43GD4-316-AM15NO2HTS6* for a 24 V (dc) intrinsically safe solenoid.
- 5 If required, select a limit switch from Ordering Information on page 12, then add the designator to the part number. *Example: 43GD4-316-AM15NO2HTS6L2B* for NEMA 4 limit switch.

# Actuated Ball Valve Assemblies

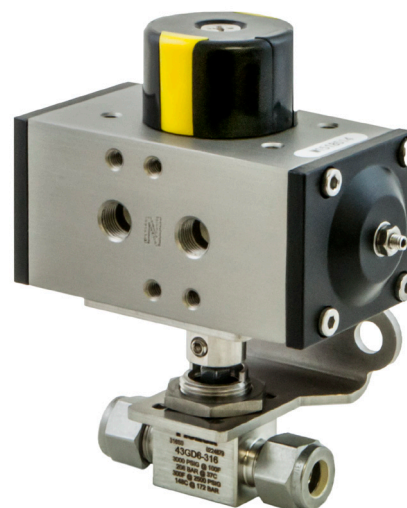
## EB Series Encapsulated Ball Valves

EB Series ball valves are designed for use in analytical instrumentation and other medium pressure applications up to 3000 psig (206 bar).

Features include:

- One-piece packing encapsulates the trunnion-style ball eliminating dead space to maximize purgeability for clean and accurate samples.
- Blowout proof stem for safety.

For more information, see the EB Series Encapsulated Ball Valves Catalog.



## Actuator Selection Table

From the table below, locate the Actuator Designator for the valve size and operation required.

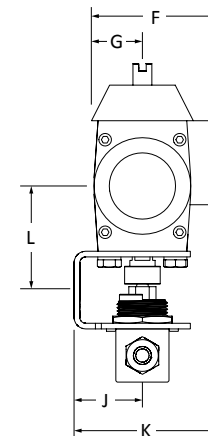
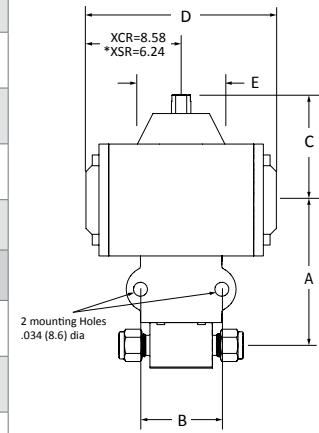
Valve Size	Actuator Designator <sup>1</sup>			Actuator Part Number			Mounting Bracket Kit Part Number		
	Spring Return		Double Acting						
	Normally Closed	Normally Open		Normally Closed	Normally Open	Double Acting	Spring Return	Double Acting	
Two-Way Valves									
41, 42	-AM15NC2	-AM15NO2	-AM10DA	AM15NC2	AM15NO2	AM10DA	41-MB-F04-11ISO-F	41-MB-F03-9ISO-F	
43	-AM15NC2	-AM15NO2	-AM10DA	AM15NC2	AM15NO2	AM10DA	43-MB-F04-11ISO-F	43-MB-F03-9ISO-F	
44	-AM20NC3	-AM20NO3	-AM15DA	AM20NC3	AM20NO3	AM15DA	44-MB-F05-11ISO-F	44-MB-F04-11ISO-F	
45	-AM25NC3	-AM25NO3	-AM20DA	AM25NC3	AM25NO3	AM20DA	45-MB-F05-14ISO-F	45-MB-F05-11ISO-F	
3-Way 90° Actuation									
	Spring Return Port 1 NC	Spring Return Port 2 NC	Double Acting	Spring Return Port 1 NC	Spring Return Port 2 NC	Double Acting	Spring Return	Double Acting	
41XQS 42XQS	-AM15SR12	-AM15SR22	-AM10DA	AM15SR12-XQS	AM15SR22-XQS	AM10DA-XQS	41-MB-F04-11ISO-F	41-MB-F03-9ISO-F	
43XQS	-AM15SR12	-AM15SR22	-AM10DA	AM15SR12-XQS	AM15SR22-XQS	AM10DA-XQS	43-MB-F04-11ISO-F	43-MB-F03-9ISO-F	
44XQS	-AM20SR13	-AM20SR23	-AM15DA	AM20SR13-XQS	AM20SR23-XQS	AM15DA-XQS	44-MB-F05-11ISO-F	44-MB-F04-11ISO-F	
45XQS	-AM25SR13	-AM25SR23	-AM20DA	AM25SR13-XQS	AM25SR23-XQS	AM20DA-XQS	45-MB-F05-14ISO-F	45-MB-F05-11ISO-F	
3-Way 180° Actuation									
	Spring Return Port 1 NC	Spring Return Port 2 NC	Spring Return to Center	Double Acting	Spring Return Port 1 NC	Spring Return Port 2 NC	Spring Return to Center	Double Acting	Mounting Bracket Kit Part Number
41X/42X	-AM25XSR1	-AM25XSR2	-AM25XCR	-AM25XDA	AM25XSR1	AM25XSR2	AM25XCR	AM25XDA	41-MB-F05-14ISO-F
43X	-AM25XSR1	-AM25XSR2	-AM25XCR	-AM25XDA	AM25XSR1	AM25XSR2	AM25XCR	AM25XDA	43-MB-F05-14ISO-F
44X	-AM25XSR1	-AM25XSR2	-AM25XCR	-AM25XDA	AM25XSR1	AM25XSR2	AM25XCR	AM25XDA	44-MB-F05-14ISO-F
45X	-AM25XSR1	-AM25XSR2	-AM25XCR	-AM25XDA	AM25XSR1	AM25XSR2	AM25XCR	AM25XDA	45-MB-F05-14ISO-F

<sup>1</sup>Actuators are selected based on a minimum supply pressure of 60 psig (4.13 bar).



# Actuated Ball Valve Assembly Dimensions

Valve Size	Actuator Model	Dimensions in. (mm)									
		A	B	C	D	E	F	G	J	K	L
Two-Way Valves											
41/42	AM10DA	2.59 (65.8)	2.00 (50.8)	1.87 (47.5)	3.94 (100.1)	1.56 (39.6)	2.00 (50.8)	0.90 (22.9)	1.44 (36.6)	2.54 (64.5)	1.57 (39.9)
	AM15 (NC/NO)	3.07 (78)	2.00 (50.8)	2.58 (65.5)	4.68 (118.9)	2.15 (54.6)	2.62 (66.5)	1.02 (25.9)	1.44 (36.6)	3.04 (77.2)	2.05 (52.1)
43	AM10DA	2.65 (67.3)	2.00 (50.8)	1.87 (47.5)	3.94 (100.1)	1.56 (39.6)	2.00 (50.8)	0.90 (22.9)	1.44 (36.6)	2.54 (64.5)	1.55 (39.4)
	AM15 (NC/NO)	3.13 (79.5)	2.00 (50.8)	2.58 (65.5)	4.68 (118.9)	2.15 (54.6)	2.62 (66.5)	1.02 (25.9)	1.44 (36.6)	3.04 (77.2)	2.03 (51.6)
44	AM15DA	3.57 (90.7)	2.00 (50.8)	2.58 (65.5)	4.68 (118.9)	2.15 (54.6)	2.62 (66.5)	1.02 (25.9)	1.44 (36.6)	3.04 (77.2)	2.19 (55.6)
	AM20 (NC/NO)	3.51 (89.2)	2.00 (50.8)	2.54 (64.5)	6.30 (160)	2.15 (54.6)	2.76 (70.1)	1.14 (29)	1.44 (36.6)	3.06 (77.7)	2.13 (54.1)
45	AM20DA	3.64 (92.5)	2.19 (55.6)	2.54 (64.5)	6.30 (160)	2.15 (54.6)	2.76 (70.1)	1.14 (29)	1.72 (43.7)	3.34 (84.8)	2.23 (56.6)
	AM25 (NC/NO)	4.27 (108.5)	2.19 (55.6)	2.64 (67.1)	6.52 (165.6)	2.15 (54.6)	3.19 (81.0)	1.31 (33.3)	1.72 (43.7)	3.60 (91.4)	2.66 (67.6)
Three-Way XQS Valves 90° Actuation											
41XQS 42XQS	AM10DA	2.59 (65.8)	2.00 (50.8)	1.87 (47.5)	3.94 (100.1)	1.56 (39.6)	2.00 (50.8)	0.90 (22.9)	1.44 (36.6)	2.54 (64.5)	1.57 (39.9)
	AM15 (NC/NO)	3.07 (78)	2.00 (50.8)	2.58 (65.5)	4.68 (118.9)	2.15 (54.6)	2.62 (66.5)	1.02 (25.9)	1.44 (36.6)	3.04 (77.2)	2.05 (52.1)
43XQS	AM10DA	2.65 (67.3)	2.00 (50.8)	1.87 (47.5)	3.94 (100.1)	1.56 (39.6)	2.00 (50.8)	0.90 (22.9)	1.44 (36.6)	2.54 (64.5)	1.55 (39.4)
	AM15 (NC/NO)	3.13 (79.5)	2.00 (50.8)	2.58 (65.5)	4.68 (118.9)	2.15 (54.6)	2.62 (66.5)	1.02 (25.9)	1.44 (36.6)	3.04 (77.2)	2.03 (51.6)
44XQS	AM15DA	3.57 (90.7)	2.00 (50.8)	2.58 (65.5)	4.68 (118.9)	2.15 (54.6)	2.62 (66.5)	1.02 (25.9)	1.44 (36.6)	3.04 (77.2)	2.19 (55.6)
	AM20 (NC/NO)	3.51 (89.2)	2.00 (50.8)	2.54 (64.5)	6.30 (160)	2.15 (54.6)	2.76 (70.1)	1.14 (29)	1.44 (36.6)	3.06 (77.7)	2.13 (54.1)
45XQS	AM20DA	3.64 (92.5)	2.19 (55.6)	2.54 (64.5)	6.30 (160)	2.15 (54.6)	2.76 (70.1)	1.14 (29)	1.72 (43.7)	3.34 (84.8)	2.23 (56.6)
	AM25 (NC/NO)	4.27 (108.5)	2.19 (55.6)	2.64 (67.1)	6.52 (165.6)	2.15 (54.6)	3.19 (81)	1.31 (33.3)	1.72 (43.7)	3.6 (91.4)	2.66 (67.6)
Three-Way Valves 180° Actuation											
41X/42X	AM25XDA	3.67 (93.2)	2.00 (50.8)	2.82 (71.6)	9.21 (233.9)	2.15 (54.6)	3.35 (85.1)	1.37 (34.8)	1.44 (36.6)	3.43 (87.1)	2.65 (67.3)
	AM25XCR	3.67 (93.2)	2.00 (50.8)	2.82 (71.6)	13.19 (335)	2.15 (54.6)	3.35 (85.1)	1.37 (34.8)	1.44 (36.6)	3.43 (87.1)	2.65 (67.3)
	AM25XSR	3.67 (93.2)	2.00 (50.8)	2.82 (71.6)	10.85 (275.6)	2.15 (54.6)	3.35 (85.1)	1.37 (34.8)	1.44 (36.6)	3.43 (87.1)	2.65 (67.3)
43X	AM25XDA	3.73 (94.7)	2.00 (50.8)	2.82 (71.6)	9.21 (233.9)	2.15 (54.6)	3.35 (85.1)	1.37 (34.8)	1.44 (36.6)	3.43 (87.1)	2.63 (66.8)
	AM25XCR	3.73 (94.7)	2.00 (50.8)	2.82 (71.6)	13.19 (335)	2.15 (54.6)	3.35 (85.1)	1.37 (34.8)	1.44 (36.6)	3.43 (87.1)	2.63 (66.8)
	AM25XSR	3.73 (94.7)	2.00 (50.8)	2.82 (71.6)	10.85 (275.6)	2.15 (54.6)	3.35 (85.1)	1.37 (34.8)	1.44 (36.6)	3.43 (87.1)	2.63 (66.8)
44X	AM25XDA	4.17 (105.9)	2.00 (50.8)	2.82 (71.6)	9.21 (233.9)	2.15 (54.6)	3.35 (85.1)	1.37 (34.8)	1.44 (36.6)	3.43 (87.1)	2.79 (70.9)
	AM25XCR	4.17 (105.9)	2.00 (50.8)	2.82 (71.6)	13.19 (335)	2.15 (54.6)	3.35 (85.1)	1.37 (34.8)	1.44 (36.6)	3.43 (87.1)	2.79 (70.9)
	AM25XSR	4.17 (105.9)	2.00 (50.8)	2.82 (71.6)	10.85 (275.6)	2.15 (54.6)	3.35 (85.1)	1.37 (34.8)	1.44 (36.6)	3.43 (87.1)	2.79 (70.9)
45X	AM25XDA	4.50 (114.3)	2.19 (55.6)	2.82 (71.6)	9.21 (233.9)	2.15 (54.6)	3.35 (85.1)	1.37 (34.8)	1.72 (43.7)	3.71 (94.2)	2.89 (73.4)
	AM25XCR	4.50 (114.3)	2.19 (55.6)	2.82 (71.6)	13.19 (335)	2.15 (54.6)	3.35 (85.1)	1.37 (34.8)	1.72 (43.7)	3.71 (94.2)	2.89 (73.4)
	AM25XSR	4.50 (114.3)	2.19 (55.6)	2.82 (71.6)	10.85 (275.6)	2.15 (54.6)	3.35 (85.1)	1.37 (34.8)	1.72 (43.7)	3.71 (94.2)	2.89 (73.4)



# TB Series Trunnion Ball Valves

TB Series trunnion ball valves provide positive shut-off and directional flow control for systems with working pressures up to 10,000 psig and temperatures from -40 to 450°F (-40 to 232°C). Features include:

- Trunnions stabilize the ball for a tight seal at high and low pressures.
- Spring-loaded seat carriers independently apply pressure to the seats to provide leak-tight shut off at high and low pressures and compensate for seat wear.
- Bottom-loaded, blowout proof stem for safety and reliability.

For more information, see the TB Series Trunnion Ball Valves catalog.



## Actuator Selection Table

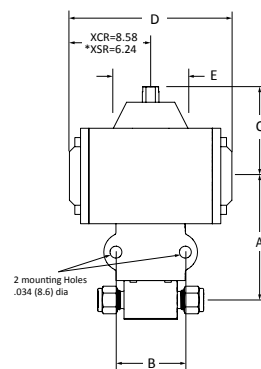
From the table below, locate the Actuator Designator for the valve size and operation required.

Valve Size	Actuator Designator <sup>1</sup>			Actuator Part Number			Mounting Bracket Kit Part Number		
	Spring Return		Double Acting						
	Normally Closed	Normally Open		Normally Closed	Normally Open	Double Acting	Spring Return	Double Acting	
Two-Way Valves									
83/H83	-AM15NC2	-AM15NO2	-AM10DA	AM15NC2	AM15NO2	AM10DA	83-MB-F04-11ISO-F	83-MB-F03-9ISO-F	
L83	-AM20NC3	-AM20NO3	-AM10DA	AM20NC3	AM20NO3	AM10DA	83-MB-F05-11ISO-F	83-MB-F03-9ISO-F	
LH83	-AM20NC3	-AM20NO3	-AM15DA	AM20NC3	AM20NO3	AM15DA	83-MB-F05-11ISO-F	83-MB-F04-11ISO-F	
Three-Way Valves									
Valve Size	Actuator Designator <sup>1</sup>				Actuator Part Number				Mounting Bracket Kit Part Number
	Spring Return Port 1 NC	Spring Return Port 2 NC	Spring Return to Center	Double Acting	Spring Return Port 1 NC	Spring Return Port 2 NC	Spring Return to Center	Double Acting	
83X/L83X	-AM25XSR1	-AM25XSR2	-AM25XCR	-AM25XDA	AM25XSR1	AM25XSR2	AM25XCR	AM25XDA	83-MB-F05-14ISO-F
H83X/LH83X	-AM25XSR1	-AM25XSR2	-AM25XCR	-AM25XDA	AM25XSR1	AM25XSR2	AM25XCR	AM25XDA	83-MB-F05-14ISO-F

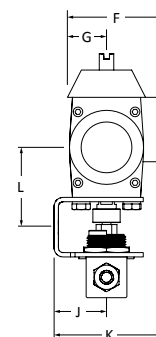
<sup>1</sup>Actuators are selected based on a minimum supply pressure of 60 psig (4.13 bar).

## Actuated Ball Valve Assembly Dimensions

Valve Size	Actuator Model	Dimensions in. (mm)									
		A	B	C	D	E	F	G	J	K	L
Two-Way Valves											
83/H83	AM10DA	2.97 (75.4)	2.00 (50.8)	1.87 (47.5)	3.94 (100.1)	1.56 (39.6)	2.00 (50.8)	0.90 (22.9)	1.44 (36.6)	2.54 (64.5)	1.67 (42.4)
	AM15 (NC/NO)	3.46 (87.9)	2.00 (50.8)	2.58 (65.5)	4.68 (118.9)	2.15 (54.6)	2.62 (66.5)	1.02 (25.9)	1.44 (36.6)	3.04 (77.2)	2.16 (54.9)
L83	AM10DA	2.97 (75.4)	2.00 (50.8)	1.87 (47.5)	3.94 (100.1)	1.56 (39.6)	2.00 (50.8)	0.90 (22.9)	1.44 (36.6)	2.54 (64.5)	1.67 (42.4)
	AM20 (NC/NO)	3.40 (86.4)	2.00 (50.8)	2.54 (64.5)	6.30 (160)	2.15 (54.6)	2.76 (70.1)	1.14 (29)	1.44 (36.6)	3.06 (77.7)	2.10 (53.3)
LH83	AM15DA	3.46 (87.9)	2.00 (50.8)	2.58 (65.5)	4.68 (118.9)	2.15 (54.6)	2.62 (66.5)	1.02 (25.9)	1.44 (36.6)	3.04 (77.2)	2.16 (54.9)
	AM20 (NC/NO)	3.40 (86.4)	2.00 (50.8)	2.54 (64.5)	6.30 (160)	2.15 (54.6)	2.76 (70.1)	1.14 (29)	1.44 (36.6)	3.06 (77.7)	2.10 (53.3)
Three-Way Valves 180° Actuation											
83X/H83X L83X/LH83X	AM25XDA	4.06 (103.1)	2.00 (50.8)	2.82 (71.6)	9.21 (233.9)	2.15 (54.6)	3.35 (85.1)	1.37 (34.8)	1.44 (36.6)	3.43 (87.1)	2.76 (70.1)
	AM25XCR	4.06 (103.1)	2.00 (50.8)	2.82 (71.6)	13.19 (335)	2.15 (54.6)	3.35 (85.1)	1.37 (34.8)	1.44 (36.6)	3.43 (87.1)	2.76 (70.1)
	AM25XSR	4.06 (103.1)	2.00 (50.8)	2.82 (71.6)	10.85 (275.6)	2.15 (54.6)	3.35 (85.1)	1.37 (34.8)	1.44 (36.6)	3.43 (87.1)	2.76 (70.1)



\*Three-Way 180° Actuators Only





# FB Series Multipurpose Ball Valves

FB Series valves are multipurpose ball valves designed for demanding applications having high-cycle, dynamic pressures up to 6000 psig (413 bar), extended temperature ranges from -40 to 400° F (-40 to 206° C), flow coefficients up to 13.8 and end connections up to 1 in.

The live-loaded floating ball design:

- Allows the valve to seal independent of upstream pressure.
- Compensates for seat wear.
- Reduces actuation torque.

The end-screw design enables system designers to configure valves with a wide range of end connection types and sizes.

For more information, see the FB Series Ball Valves catalog.



## Actuator Selection Table

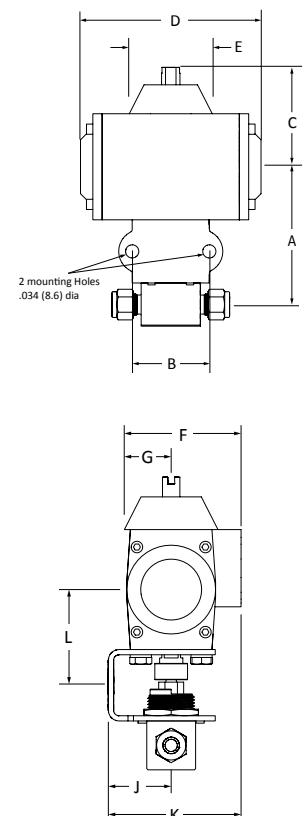
From the table below, locate the Actuator Designator for the valve size and operation required.

Valve Size	Actuator Designator <sup>1</sup>			Actuator Part Number			Mounting Bracket Kit Part Number	
	Spring Return		Double Acting	Spring Return		Double Acting		
	Normally Closed	Normally Open		Normally Closed	Normally Open		Spring Return	Double Acting
Two-Way Valves								
36/L36	-AM15NC2	-AM15NO2	-AM10DA	AM15NC2	AM15NO2	AM10DA	36-MB-F04-11ISO-F	36-MB-F03-9ISO-F
38	-AM25NC3	-AM25NO3	-AM15DA	AM25NC3	AM25NO3	AM15DA	38-MB-F05-14ISO-F	38-MB-F04-11ISO-F
L38	-AM35NC3	-AM35NO3	-AM25DA	AM35NC3	AM35NO3	AM25DA	38-MB-F05-17ISO-F	38-MB-F05-14ISO-F

<sup>1</sup>Actuators are selected based on a minimum supply pressure of 60 psig (4.13 bar).

## Actuated Ball Valve Assembly Dimensions

Valve Size	Actuator Model	Dimensions in. (mm)									
		A	B	C	D	E	F	G	J	K	L
Two-Way Valves											
36/L36	AM10DA	2.64 (67.1)	2.00 (50.8)	1.87 (47.5)	3.94 (100.1)	1.56 (39.6)	2.00 (50.8)	0.90 (22.9)	1.44 (36.6)	2.54 (64.5)	1.55 (39.4)
36/L36	AM15 (NC/NO)	3.13 (79.5)	2.00 (50.8)	2.58 (65.5)	4.68 (118.9)	2.15 (54.6)	2.62 (66.5)	1.02 (25.9)	1.44 (36.6)	3.04 (77.2)	2.03 (51.6)
38	AM15DA	3.96 (100.6)	2.19 (55.6)	2.58 (65.5)	4.68 (118.9)	2.15 (54.6)	2.62 (66.5)	1.02 (25.9)	1.72 (43.7)	3.32 (84.3)	2.29 (58.2)
38	AM25 (NC/NO)	4.33 (110)	2.19 (55.6)	2.64 (67.1)	6.52 (165.6)	2.15 (54.6)	3.19 (81)	1.31 (33.3)	1.72 (43.7)	3.60 (91.4)	2.66 (67.6)
L38	AM25DA	4.33 (110)	2.19 (55.6)	2.64 (67.1)	6.52 (165.6)	2.15 (54.6)	3.19 (81)	1.31 (33.3)	1.72 (43.7)	3.60 (91.4)	2.66 (67.6)
L38	AM35 (NC/NO)	4.52 (114.8)	2.19 (55.6)	3.13 (79.5)	6.96 (176.8)	2.15 (54.6)	3.70 (94)	1.59 (40.4)	1.72 (43.7)	3.82 (97)	2.85 (72.4)



# Actuator Options and Accessories

## Temperature

To order actuators for other temperature ranges, add the designator from the table below to the part number.

*Example: L36PD4-AM15NC2LT*

Option	Temperature Range	Designator
Standard	-4 to 176°F (-20 to 80°C)	Blank
High-Temperature	-10 to 300°F / 350°F Cyclic (-23 to 148°C / 176°C Cyclic)	HT
Low-Temperature Silicone	-49 to 300°F / 350°F Cyclic (-45 to 148°C / 176°C Cyclic)	LT
Low-Temperature NBR	-40 to 212°F (-40 to 100°C)	LTB
Super-Low Temperature	-67 to 300°F / 350°C Cyclic -55 to 148°C / 176°C Cyclic	SLT

## Corrosion-Resistant Housing

The standard housing material is anodized aluminum. A range of corrosion resistant coated and stainless steel housings and end caps are available. Contact your local authorized SSP distributor or SSP Customer Service for more information.

## Dual Mounted Assemblies

Dual mounted assemblies, which place two valves on one actuator are available on

- EB Series sizes 42 and 43
- FB Series size 36
- All TB Series valves

Contact your authorized SSP distributor or SSP Customer Service for more information.

## Position Sensor

To order a position sensor in your assembly, add the designator from the table below to the part number.

*Example: 43GD4-316-AM15N02S1P1*

Type	Designator
Pepperl & Fuchs NBN3-F25-E9-V1	P1
Pepperl & Fuchs NCN3-F25-N4-V1	P2

## Fusible Plugs

Fusible plugs provide a means of emergency venting which depends only on temperature. Plugs are designed to melt and blow out at a predetermined temperature, venting both the supply air and actuator pressure to atmosphere, causing the valve to cycle to a failsafe position. To specify fusible plugs for your assembly, add the designator from the table below to your part number. *Example: L36PD4-AM15NC2F1*

Designator	Mark	Color Code	Melt Point	
			°F	°C
F1	158°F	Black	158	70
F2	184°F	White	183	84
F3	203°F	Orange	203	95
F4	255°F	Green	253	123
F5	281°F	Red	284	140

## Vent Protector (Mud Dauber) Fittings

Vent protector fittings for exhaust or unused actuator and solenoid ports can be ordered separately. *Part Number: ISST4MD*

## Mounting Brackets

ISO 5211 mounting brackets and couplings are specified in the actuator selection tables for each valve series. The standard offering is based on ISO style couplings with fractional mounting hardware. DIN style couplings with metric mounting hardware are available.

## Customer-Specified Assemblies

SSP can provide actuated ball valve assemblies using customer-specified components. Customers can provide components for assembly, or SSP can source the required components from a wide range of manufacturers.

# Solenoids

SSP offers solenoid valves with NAMUR style mounting for use in either double acting or spring return actuators. They are available in single coil, dual coil, or 3-position configurations. Solenoid valves are available in compliance with intrinsically safe and explosion proof environments. Low voltage solenoids and other options are available.

## Specifications

Feature	Standard
Direct Mount Standard	NAMUR
Body	Powder Epoxy Coated Aluminum
Spool	Anodized Aluminum
Spring	Stainless Steel
Seals	NBR
Coil Class	Class F Standard Duty
Wiring Connections	1/2 in. NPT or 1/4 in. Cable Gland
Operation	3-way or 4-way air piloted
Ambient Temp. Range	-4 to 158° F
Enclosure Rating	IP65
Voltage	120 and 220V AC, 24 VDC, 12VDC/24 VAC and 230 VAC/125 VDC
Manual Override	Lockable
Pressure Rating	0 to 120 psig
Flow Coefficient	1.1
Certifications <sup>1</sup>	CSA/UL, ATEX

<sup>1</sup>Certifications vary by solenoid.



## Features

- Standard CSA/UL Certified
- Configuration
  - Standard Duty
  - Intrinsically Safe
  - Explosion Proof
  - Low-Temperature
- Single, dual, or 3 position
- Can be used with lubricated or non-lubricated air
- Standard lockable manual override button
- Water and dust proof - IP65

## Options

- Intrinsically safe and explosion proof
- High temp. FKM seals
- IP67 watertight kit
- Stainless steel body
- Lighted and molded DIN connectors
- Class H coils
- 3-way and 4-way adapter plates
- Dual coil and 3 position
- Low voltage options

## Ordering Information

To order solenoids locate the designator for the required voltage and duty in the table below, then add it to the part number.

**Example: 43GD4-316-AM15N02HTS6**

**Solenoid Kits.** Left-pilot solenoid kits are standard. For right-pilot solenoid kits add R, for dual coil add D after the Kit Part Number. **Example: SVK-S1R**

Designator	Voltage/Duty	Kit Part Number
S1	120 V (ac) / NEMA 4, 4X	SVK-S1
S2	24 V (dc) / NEMA 4, 4X	SVK-S2
S3	220 V (ac) / NEMA 4, 4X	SVK-S3
S4	12 V (dc) / NEMA 4, 4X	SVK-S4
S5	120 V (ac) / NEMA 7, 9	SVK-S5
S6	24 V (dc) / Intrinsically Safe	SVK-S6

### Double-Acting Actuator

Add the designator below before the solenoid designator. **Example: CS2**

Type (2-way / 3-way 90° & 180°)	Designator
Energize to Open / Open Port 1	C
Energize to Close / Close Port 1	O
Dual Coil	D

### Other Options

Add the designator below after the solenoid designator in alphabetical order. **Example: S6A**

Type	Designator
ATEX Certification	A
Low Temperature	LT
High Temperature (250°F/300°F cyclic)	HT
Stainless Steel Body	S

# Limit Switches

SSP offers limit switches for applications requiring that the position/status of the actuator be monitored from a remote location. SSP offers NEMA 4 Type 1, 2, 3, 4, 4X, general purpose watertight and NEC Class 1 (NEMA 7), Division 1, Groups C and D, and NEC Class II (NEMA 9), Division 1, Groups E, F, G watertight and explosion proof switches.

## Features

- Compact Design
- Quick Set Cams
- Easy wiring - PCB Terminal, 10 pt.
- High visibility open/close beacon
- NAMUR mounting bracket
- Captive cover bolts

## Options

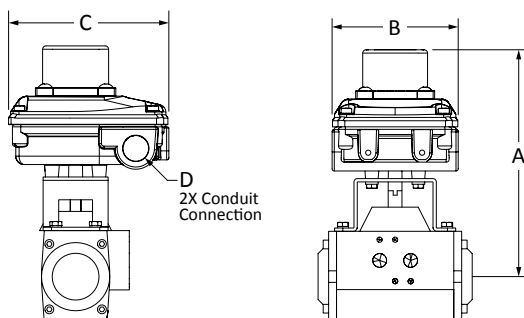
- Mechanical, Inductive Proximity and Magnetic Switches
  - IFM, Honeywell, Omron and Pepperl & Fuchs
- NEMA 4, 4X, 7, 9
- Variety of mounting brackets
- Stainless steel housing and brackets
- Lighted and molded DIN connectors
- Dual coil 7-8-7-9 and 7-8-9-10 circuit boards
- 3-way T-port and L-Port Beacon options

## Specifications

Specification	Standard
Cable Entry	1/2 NPT (2)
Temperature	-4 to 176° F (-20 to 80° C) (Standard Contacts)
Terminal Strip	10 pt. single coil solenoid (7-8-7-8) 10 pt. dual coil solenoid (7-8-7-9) (Optional)
Weights	Aluminum: 1.62 lbs (0.74 kg) Stainless Steel: 3.94 lbs (1.79 kg) (Optional)
Seals	NBR
Shaft	304 SS
Cams	ABS

## Dimensions

Limit Switch Model	Actuator Model							
	AM10	AM15	AM20	AM25	AM35	All Models		
	A	A	A	A	A	B	C	D
L1B	6.00 (151.6)	6.89 (175.0)	6.87 (174.5)	6.97 (177.0)	7.44 (189.0)	3.83 (97.3)	4.78 (121.4)	1/2 NPT
L2B	6.48 (164.6)	7.42 (188.5)	7.41 (188.2)	7.50 (190.5)	7.97 (202.4)	5.71 (145.0)	5.71 (145.0)	1/2 NPT



## Materials of Construction

Component	Standard
Enclosure	Epoxy Coated Die Cast Aluminum
Bracket	300 Series SS
Indicator	Polycarbonate
Fastener	316 SS
Seals	NBR
Shaft	304 SS
Cams	ABS

## Ordering Information

To order limit switches for your assembly, add the designator from the table below to the part number.  
Example: 43GD4-316-AM15N02HTS6L2B.

Designator	Type	Description
NEMA 4, 4X		
L1B	Mechanical	Omron SS-5 or SSG, SPDT, 5A 250V
L1AB*	Mechanical	Omron SS-01, SPDT, 0.1A 125VAC 30VDC, Gold Plated Contacts
L2B*	Magnetic	Magnetic Reed Hamlin (Low Power, 5W Max)
L3B*	Inductive	IFM IS5001 DC 3 Wire PNP Switch (10-36V, NO)
NEMA 4, 4X, 7, 9		
L4B	Mechanical	Omron D3V11 or Cherry D44 (250VAC/DC, 11A MAX, 50/60 HZ)
L4AB*	Mechanical	Honeywell V7, 250VAC/DC, 0.1A MAX, 50/60 HZ Gold Plated Contacts
L5B*	Magnetic	Magnetic Reed Hamlin (Low Power, 5W Max)
L6B*	Inductive	IFM IS5001 DC 3 Wire PNP Switch (10-36V, NO)

\*Intrinsically Safe

### Limit Switch Options

Add the designator below to the limit switch designator.  
S Stainless steel enclosure  
D Dual Coil 7-8-7-9 circuit board

Valve Flow Pattern	Kit Ordering Numbers	
	AM10	AM15 to AM35
Two-Way 90°	LSK*-AM10	LSK-*
Three-Way 180°	LSK*-X-AM10	LSK*-X
Three-Way 90°	LSK*-XQS-AM10	LSK*-XQS

\*Limit switch designator from chart above.

Example: LSK-L1ABXQS-AM10

## Actuators

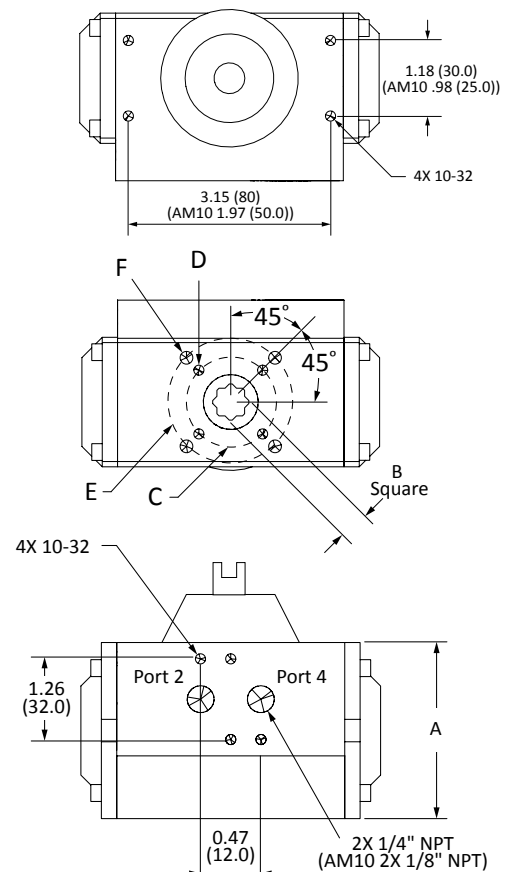
SSP will sell actuators for field installation on SSP valves. To order actuators for SSP ball valves find the part number for the valve series/size and actuator from the Actuator Part Number tables below.  
Example: **AM25NC3** for a 38 Series, two-way normally closed actuator.



## Actuator Part Numbers

Valve Series/ Size	Actuator Part Number		
	Normally Closed	Normally Open	Double Acting
Two-Way Valves			
41, 42	AM15NC2	AM15NO2	AM10DA
43	AM15NC2	AM15NO2	AM10DA
44	AM20NC3	AM20NO3	AM15DA
45	AM25NC3	AM25NO3	AM20DA
36/L36	AM15NC2	AM15NO2	AM10DA
38	AM25NC3	AM25NO3	AM15DA
L38	AM35NC3	AM35NO3	AM25DA
83/H83	AM15NC2	AM15NO2	AM10DA
L83	AM20NC3	AM20NO3	AM10DA
LH83	AM20NC3	AM20NO3	AM15DA
3-Way 90° Actuation			
	Spring Return Port 1 NC	Spring Return Port 2 NC	Double Acting
41XQS 42XQS	AM15SR12-XQS	AM15SR22-XQS	AM10DA-XQS
43XQS	AM15SR12-XQS	AM15SR22-XQS	AM10DA-XQS
44XQS	AM20SR13-XQS	AM20SR23-XQS	AM15DA-XQS
45XQS	AM25SR13-XQS	AM25SR23-XQS	AM20DA-XQS

Valve Series/ Size	Actuator Part Number			
	Spring Return			
3-Way 180° Actuation				
	Spring Return Port 1 NC	Spring Return Port 2 NC	Spring Return to Center	Double Acting
41/42	AM25XSR1	AM25XSR2	AM25XCR	AM25XDA
43	AM25XSR1	AM25XSR2	AM25XCR	AM25XDA
44	AM25XSR1	AM25XSR2	AM25XCR	AM25XDA
45	AM25XSR1	AM25XSR2	AM25XCR	AM25XDA
83/L83	AM25XSR1	AM25XSR2	AM25XCR	AM25XDA
H83/LH83	AM25XSR1	AM25XSR2	AM25XCR	AM25XDA



## Actuator Dimensions

Actuator Model	ISO Flange Size	Dimensions in. (mm)					
		A	B	C	D	E	F
AM10	F03	1.78 (45.2)	0.35 (9)	1.42 (36.1)	10-32	-	-
AM15	F04	2.80 (57.9)	0.43 (11)	1.65 (41.9)	10-32	-	-
AM20	F03/F05	2.68 (68.1)	0.43 (11)	1.42 (36.1)	10-32	1.97 (50)	1/4-20
AM25	F05/F07	3.19 (81.0)	0.55 (14)	1.97 (50)	1/4-20	2.76 (70.1)	5/16-18
AM35	F05/F07	3.86 (98.0)	0.67 (17)	1.97 (50)	1/4-20	2.76 (70.1)	5/16-18

# Special Orders

The Basic Part Numbers and Dimensions Tables contain only the most popular valve configurations; many other configurations are available. Use the chart below to build part numbers for quotation purposes.

**A**

43GD6-316

**B**

-AM15NC2HT

**C**

S2HT

**D**

L1B

**A**

**VALVE PART #**  
(From Valve Catalog)

**B**

## ACTUATOR

Select SSP actuator part number from tables on pages 6-9 then add the options designators to the part number.

## TEMPERATURE

Blank Standard  
HT High Temp.  
LT Low Temp. Silicone  
LTB Low Temp. Buna  
SLT Super-Low Temp.

## MOUNTING

Blank One Valve  
DM Dual Mount (2 valves)  
Available on EB Series sizes 42 and 43  
FB Series 36 and all TB Series valves. Contact SSP Customer Service for actuator sizing.

**C**

## SOLENOID

Select the Solenoid type and add any option designators to the part number.

## DOUBLE ACTING OPTIONS

Note: Only required for double acting assemblies  
C Energize to Open / Open Port 1  
O Energize to Close / Close Port 1  
D Dual Coil

## SOLENOID TYPE

S1 120 V (ac) / NEMA 4, 4X  
S2 24 V (dc) / NEMA 4, 4X  
S3 220 V (ac) / NEMA 4, 4X  
S4 12 V (dc) / NEMA 4, 4X  
S5 120 V (ac) / NEMA 7, 9  
S6 24 V (dc) / Intrinsically Safe

## OPTIONS

A ATEX Certification  
LT Low-Temperature  
HT High-Temperature  
SS Stainless Steel Body

**D**

## LIMIT SWITCH / POSITION SENSOR / FUSIBLE PLUGS

Choose either a limit switch or position indicator, then add the designator to the actuator part number. Add limit switch option designators to the limit switch part number.

### LIMIT SWITCHES

NEMA 4, 4X  
L1B Omron SS-5 or SSG, SPDT, 5A 250V  
L1AB\* Omron SS-01, SPDT, 0.1A 125VAC 30VDC, Gold Plated Contacts  
L2B\* Magnetic Reed Hamlin (Low Power, 5W Max)  
L3B\* IFM IS5001 DC 3 Wire PNP Switch (10-36V, NO)  
NEMA 4, 4X, 7 9  
L4B Omron D3V11 or Cherry D44 (250VAC/DC, 11A MAX, 50/60 HZ)  
L4AB\* Honeywell V7 (250VAC/DC, 0.1A MAX, 50/60 HZ), Gold Plated Contacts  
L5B\* Magnetic Reed Hamlin (Low Power, 5W Max)  
L6B\* IFM IS5001 DC 3 Wire PNP Switch (10-36V, NO)

\*Intrinsically Safe

### LIMIT SWITCH OPTIONS

S Stainless steel enclosure  
D Dual Coil 7-8-7-9 circuit board

### POSITION SENSOR

P1 NBN3-F25-E9-V1  
P2 NCN3-F25-N4-V1

### FUSIBLE PLUGS

#### MELT POINT °F (°C)

F1 158 (70)  
F2 183 (84)  
F3 203 (95)  
F4 253 (123)  
F5 284 (140)

## Testing

All actuated assemblies are tested for proper function. All valves are factory tested with Nitrogen to 1000 psig (69 bar) at 70°F (20°C).

## Warranty

SSP valves are backed by the SSP Lifetime Limited Warranty. This warranty is available from your local distributor or at [www.mySSP.com](http://www.mySSP.com).



## 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.



# 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.



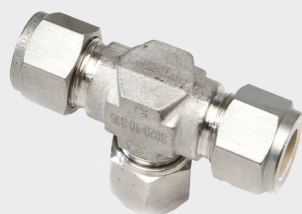
## Tubing

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.



Founded 1926

Privately owned, third generation business

Modern single-site vertically integrated manufacturing facility

DFARS-compliant raw material

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ABVPC-20A