



A Series Pneumatic Actuators

- ✓ ISO 5211 Compliant
- ✓ Standard and Custom Assemblies
- ✓ 90° and 180° Actuators
- ✓ 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

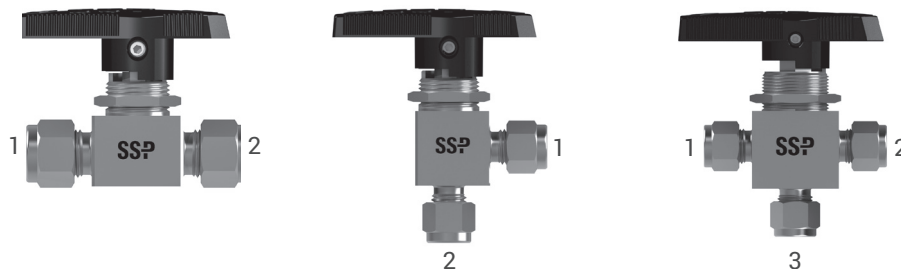
| Actuator Model | Double Acting | | Spring Return | |
|----------------|---------------|-------------------------|---------------|-------------------------|
| | Weight (lbs) | Air Consumption (cu-in) | Weight (lbs) | Air Consumption (cu-in) |
| AM10 | 1.06 | 4.03 | N/A | N/A |
| AM15 | 2.00 | 13.50 | 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.

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

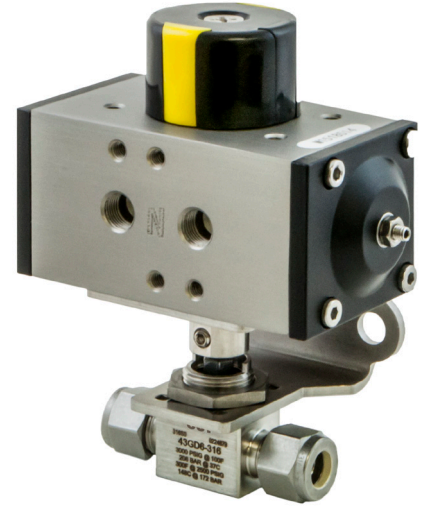
EB Series Encapsulated Ball Valves

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

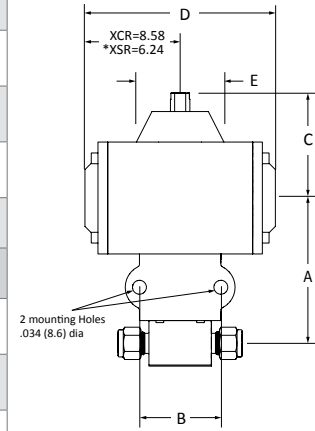
From the table below, locate the Actuator Designator for the valve size and operation required.

| Valve Size | Actuator Designator ¹ | | | Actuator Part Number | | | Mounting Bracket Kit Part Number | | |
|-----------------------------|----------------------------------|-------------------------|-------------------------|-------------------------|-------------------------|-------------------------|----------------------------------|-------------------|----------------------------------|
| | Spring Return | | Double Acting | Normally Closed | Normally Open | Double Acting | Spring Return | Double Acting | |
| | Normally Closed | Normally Open | | | | | | | |
| 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 |

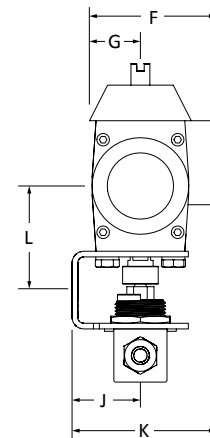
¹Actuators are selected based on a minimum supply pressure of 60 psig (4.13 bar).

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) |



*Three-Way 180° Actuators Only



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

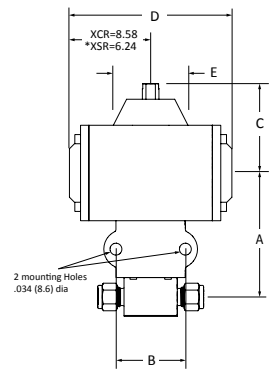
From the table below, locate the Actuator Designator for the valve size and operation required.

| Valve Size | Actuator Designator ¹ | | | Actuator Part Number | | | Mounting Bracket Kit Part Number | | |
|-------------------------|----------------------------------|-------------------------|-------------------------|----------------------|-------------------------|-------------------------|----------------------------------|-------------------|----------------------------------|
| | Spring Return | | Double Acting | Normally Closed | Normally Open | Double Acting | Spring Return | Double Acting | |
| | Normally Closed | Normally Open | | | | | | | |
| 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 ¹ | | | | 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 |

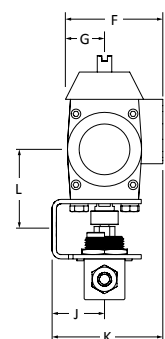
¹Actuators are selected based on a minimum supply pressure of 60 psig (4.13 bar).

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

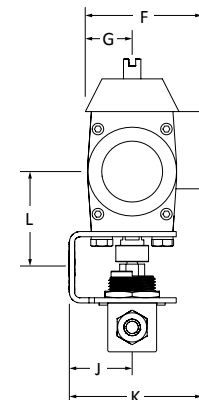
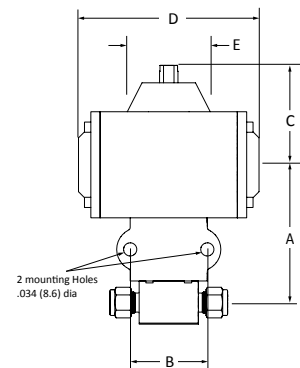
From the table below, locate the Actuator Designator for the valve size and operation required.

| Valve Size | Actuator Designator ¹ | | | Actuator Part Number | | | Mounting Bracket Kit Part Number | |
|-----------------------|----------------------------------|---------------|---------------|----------------------|---------------|---------------|----------------------------------|-------------------|
| | Spring Return | | Double Acting | Spring Return | | Double Acting | Spring Return | Double Acting |
| | Normally Closed | Normally Open | | Normally Closed | Normally Open | | | |
| 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 |

¹Actuators 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-AM15NO2S1P1*

| 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 ¹ | CSA/UL, ATEX |

¹Certifications 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

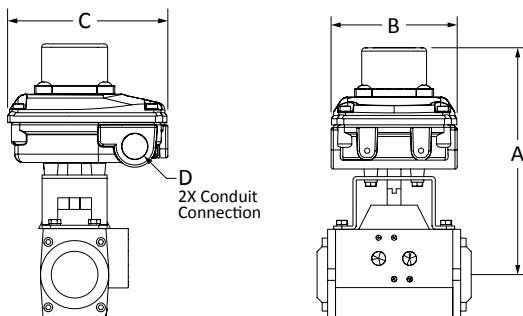
- Mechanical, Inductive Proximity and Magnetic Switches
 - IFM, Honeywell, Omron and Pepperl & Fuchs
- NEMA 4, 4X, 7, 9
- Variety of mounting brackets
- Stainless steel housing and brackets
- Lighted and molded DIN connectors
- Dual coil 7-8-7-9 and 7-8-9-10 circuit boards
- 3-way T-port and L-Port Beacon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



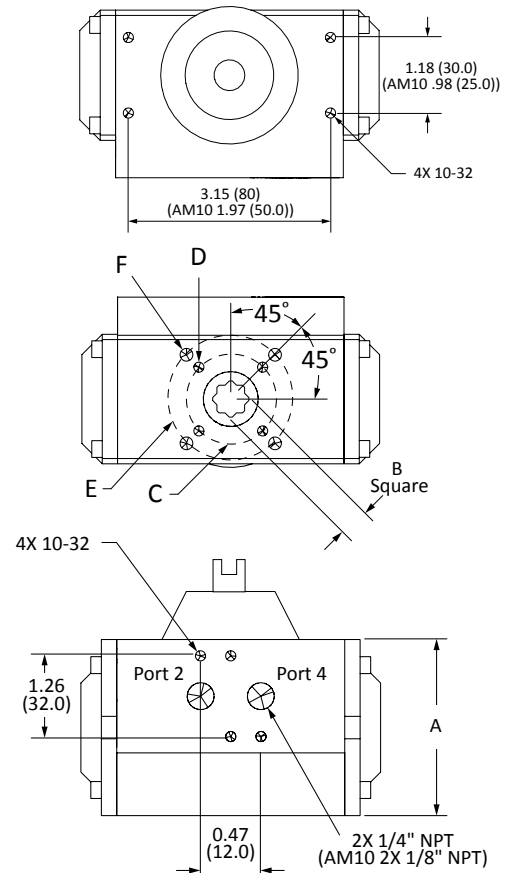
Actuator Part Numbers

| 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-QXS | 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

B

C

D

43GD6-316 -AM15NC2HT S2HT 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.



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 ensure leak-tight installation when intermixed with Swagelok®, Hoke® Gyrolok®, and Parker® CPI™ fittings, provided they are used in accordance with SSP Fittings' published installation and service recommendations.



Valves

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



Quick Connects

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



Pipe Fittings

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



Filters

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



Tools & Accessories

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



SSP

Founded 1926

Privately owned, third generation business

Modern single-site vertically integrated manufacturing facility

DFARS-compliant raw material

ISO 9001 quality management system

Limited Lifetime Warranty



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ABVPC-25A