



Features

- 1/2" - 4", DN/ISO 8 thru ISO 100 Sizes
- True Bore Design
- Cavity Free PTFE Seats
- Live Loaded Stem Seal
- ASME/BPE Compliant
- SF1 Standard Surface Finish



Evans SN Series

The Evans SN Series line of sanitary ball valves for sanitary/hygienic applications

The valves are designed with a true bore and come standard with "Cavity Free" PTFE seat inserts which makes them ideal for applications which require maximum flow capacity at minimum pressure drop, where sterility, clean-ability and drain-ability are essential. The SN Series ball valve provides tight shutoff and has exceptional cycle life performance.

Size Range:	1/2" - 4"
Service:	Clean Steam, Purified Water, Water for Injection (WFI), Gas, Chemicals, Solvents, Vacuum Service
Standards:	Conforming to ASME BPE-2016, ANSI B16.34, API 598, FDA compliant
Operation:	Hand operated, Air operated (spring return, double acting), solenoid assist, limit switch

Features & Specifications

Stem: Live loaded PTFE stem compensates for seat wear. Conforms to ASME/BPE 2016 SG-4.1.1.1. Grounded (Anti-Static) Design

Seats: PTFE 1600, non-slotted design to meet ASME/BPE 2016 SD-3.6.1, SG-4.1.1.1.6, SG- 4.1.1.8

Max Pressure Rating: 1/2" - 2" 1000 psig / 69 bar

2-1/2" - 4" 800 psig / 55 bar

Temperature Range: 0 to 325F / -18 to 162C

Internal Finish: Polished to meet ASME/BPE 2016 DT-12 and Table SF-6, mechanically polished to SFV1, electro polished to SFV4.

Outer Finish: Electropolished, FDA compliant to FDA 21 CFR 177.1550

Helium Leak Tested: 1 x 10⁻⁷ scc/sec

Markings: Valves shall be marked to conform to ASME/BPE 2016 DT-3

Packing: Valves shall conform to ASME/BPE 2016 DT-12

Options: Air Operators, Solenoid assist, Limit switch

True Bore Design: The ID for the valve flow path (ball, seats, end flanges) shall be the same ID as the tubing as per **ASME/BPE 2016 DT-1**

Cast Ball Valve

Body, Cap: ASTM A351 Gr. CF3M

Ball, Stem: SS 316L

T-Clamp Style Flange: ASTM A351 Gr. CF3M (316L), dimension per ASME/BPE 2016 DT-22

Butt-weld Flange: ASTM A351 Gr. CF3M (316L), dimension per ASME/BPE 2016 DT-5, Sulfur content between 0.005% and 0.017%

The ball valves comply with the safety requirements of Annex I of the European Pressure Directive 2017/68 EU for fluids of groups 1 and 2

Conversion Table for Surface Finishes

Table SF-3 Ra Readings for Product Contact Surfaces			
Evans Code	ASME/BPE Surface Designation	Mechanically Polished [Note (1)] Ra Max.	
		μ-in.	μm
MP1	SF1	20	0.51
Evans Code	ASME/BPE Surface Designation	Mechanically Polished [Note (1)] and Electropolished Ra Max.	
EP1	SF4	15	0.38
EP2	SF5	20	0.51
EP3	SF6	25	0.64

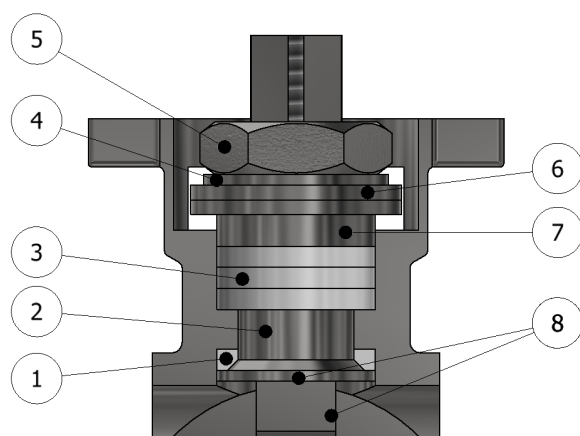


Surface finishes of the flow path for Evans SN Series valves come standard machined to a 20 Ra (SF1) mechanical surface finish. External electropolish surface finish is FDA compliant to FDA 21 CFR 177.1550

True Port Body & Stem Construction

The ball valve construction is designed in accordance with ANSI B16.34. The cavity free seal is fully encapsulated which offers improved sealing under a variety of demanding applications. The center body comes standard with an ISO 5211 mounting pad for attaching air operators, limit switches, etc. All wetted parts of the body are machined to a high finish. All valves have a blowout proof stem. The stem assembly incorporates a bevel spring live loaded design that compensates for pressure, temperature and wear. The stem is highly polished for better sealing and the handle comes standard with lockout feature.

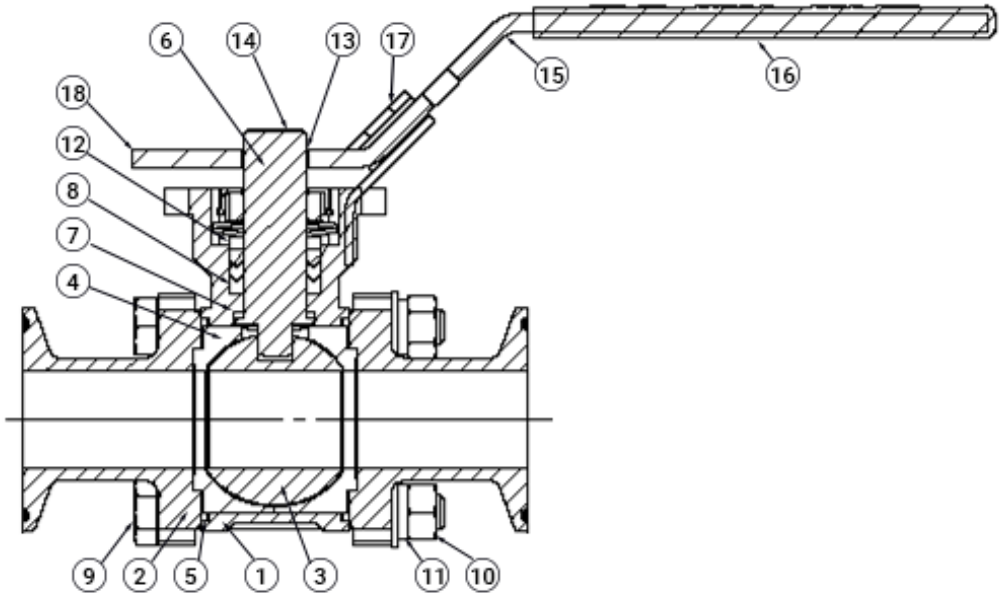
The cavity filled seat made of PTFE is designed to minimize the cavity around the ball. Media remaining in the cavities of a valve is undesirable for some hygienic/sanitary applications. These deposits can accumulate and contaminate the entire process. The cavity filled seat also enables easier cleaning of the valve. For these reasons, Evans SN Series valves come standard with cavity free seats.



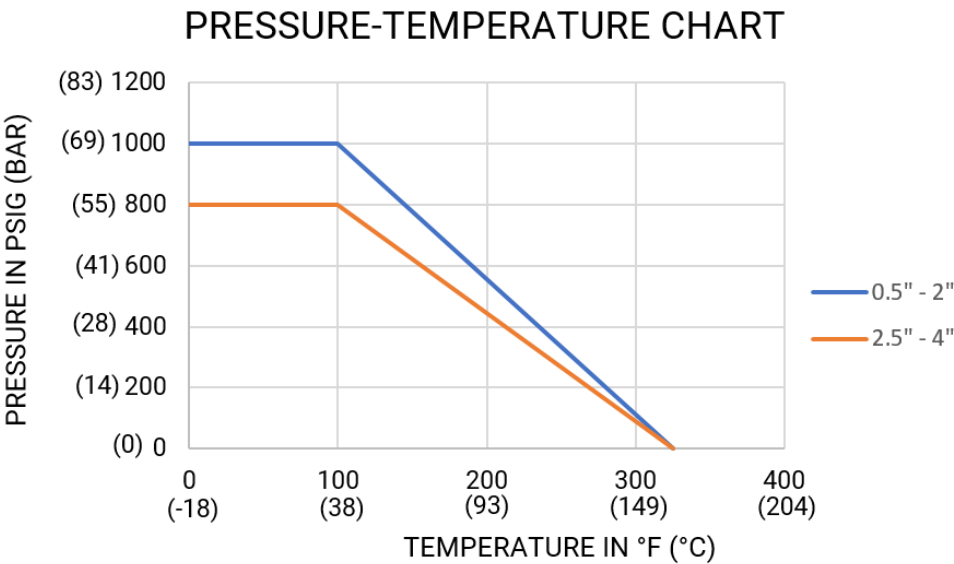
1. Conical stem seal: The seal arranged at an angle of 45° effectively prevents the leakage of medium when operating the valve.
2. Machined stem surface: reduces the friction force of the stem making it very smooth-running and low wear.
3. V-rings: When compressed, three v-rings expand sideways and prevent the leakage of the medium.
4. Lock washer: Prevents the loosening of the stem nut during operation.
5. Stem nut: fixes the entire stem system.
6. Spring bevel washers: compress the gland packing to prevent leakage of medium.
7. Stainless steel bushing: equally distributes the force on the packing.
8. Antistatic device: between stem/ball and stem/body.

Materials of Construction

Item	Description	Material	Qty
1	Body	ASTM-A351-CF3M	1
2	End Cap	ASTM-A351-CF3M	2
3	Ball	SS 316L	1
4	Seat	PTFE	2
5	Gasket	PTFE	2
6	Stem	SS 316L	1
7	Thrust Washer	PTFE, TEFLON	1
8	Stem Packing	PTFE, TEFLON	1
9	Bolt	SS 304	4
10	Hex Nut	SS 304	4
11	Bolt Washer	SS 304	4
12	Gland	SS 304	1
13	Washer	SS 304	1
14	Nut	SS 304	1
15	Handle	SS 304	1
16	Plastic Sleeve	PLASTIC	1
17	Lock Device	SS 304	4
18	Stop Pin	SS 304	4



Pressure-Temperature Chart

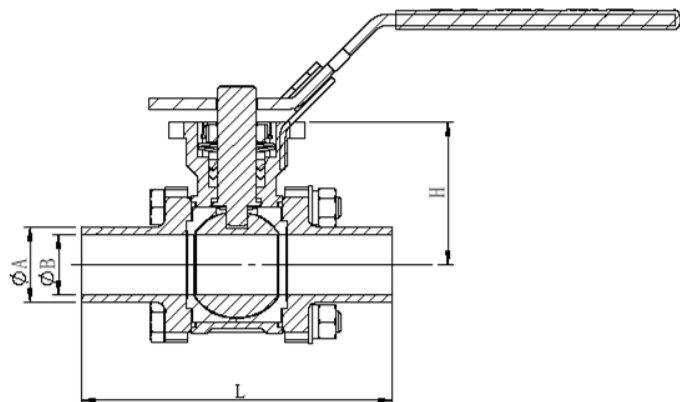


SIZE (ISO/DN)		TORQUE	FLOW COEFFICIENT	WEIGHT
DN	INCH	IN-LB (NM)	CV (KV)	LB (KG)
8	1/4"	80 9	8 7	1.32 0.60
10	3/8"	80 9	8 7	1.32 0.60
15	1/2"	89 10	15 13	1.37 0.62
20	3/4"	106 12	40 34	1.70 0.77
25	1"	159 18	70 60	2.51 1.14
32	1.25"	195 22	110 94	4.04 1.83
40	1.5"	354 40	249 213	6.37 2.89
50	2"	425 48	428 366	9.44 4.28
65	2.5"	797 90	696 595	19.01 8.62
80	3"	982 111	1094 935	27.39 12.42
100	4"	1425 161	1989 1700	45.47 20.62

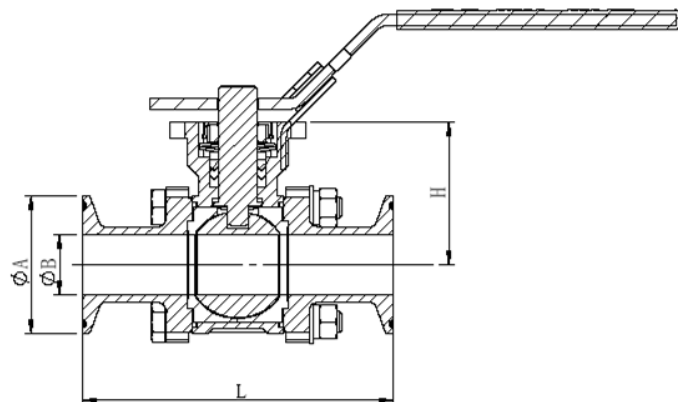
SIZE (ASME BPE)	TORQUE	FLOW COEFFICIENT	WEIGHT (CLAMP)	WEIGHT (TUBE)
INCH	IN-LB (NM)	CV (KV)	LB (KG)	LB (KG)
1/2"	89 10	11 9	1.68 0.76	1.57 0.71
3/4"	106 12	30 26	1.92 0.87	2.01 0.91
1"	159 18	64 55	3.18 1.44	2.78 1.26
1.5"	354 40	199 170	7.25 3.29	7.14 3.24
2"	425 48	408 349	10.08 4.57	7.92 3.59
2.5"	797 90	597 510	20.86 9.46	21.83 9.9
3"	982 111	1045 893	28.47 12.91	29.08 13.19
4"	1425 161	1925 1645	44.83 20.33	46.59 21.13

BPE Inch Valve Dimensions

Tube Extension Ends (STRM)



Clamp Ends (STRT)



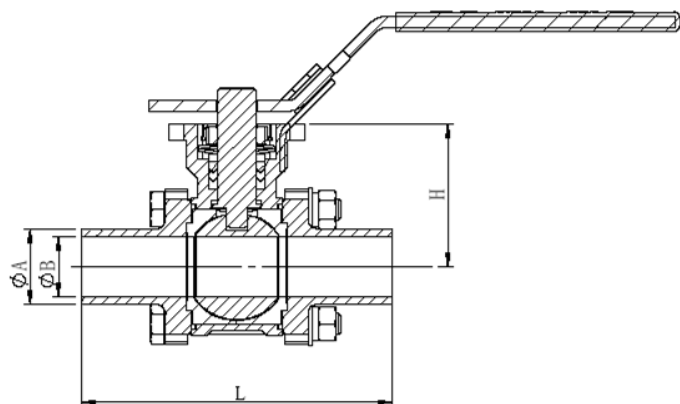
SIZE	CV	ØA	ØB	L	H
1/2"	19	0.50 12.7	0.37 9.4	3.50 89	1.46 37
3/4"	35	0.75 19.1	0.62 15.8	4.02 102	1.85 47
1'	50	1.00 25.4	0.87 22.1	4.49 114	2.25 57.2
1.5"	200	1.50 38.1	1.37 34.8	5.43 138	3.08 78.2
2'	350	2.00 50.8	1.87 47.5	6.14 156	3.39 86.2
2.5"	650	2.50 63.5	2.337 60.2	6.69 170	4.30 109.2
3"	1100	3.00 76.2	2.87 72.9	7.76 197	4.63 117.7
4'	2100	4.00 101.6	3.83 97.4	9.53 242	5.60 141.2

SIZE	CV	ØA	ØB	L	H
1/2"	19	1.00 25.4	0.37 9.4	3.50 89	1.46 37
3/4"	35	1.00 25.4	0.62 15.8	4.02 102	1.85 47
1'	50	1.99 50.5	0.87 22.1	4.49 114	2.25 57.2
1.5"	200	1.99 50.5	1.37 34.8	5.43 138	3.08 78.2
2'	350	2.52 64	1.87 47.5	6.14 156	3.39 86.2
2.5"	650	3.05 77.5	2.337 60.2	6.69 170	4.30 109.2
3"	1100	3.58 91	2.87 72.9	7.76 197	4.63 117.7
4'	2100	4.69 119	3.83 97.4	9.53 242	5.60 141.2

Note: L dimension does not change when ordering a valve with different style end connections (example: SN-16STRMT-TF-EP1 = 4.49)

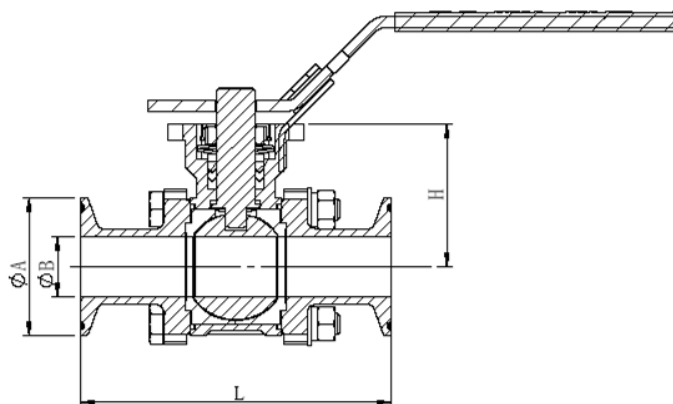
ISO/DN Valve Dimensions

Tube Extension Ends (STRK)



SIZE	CV	ØA	ØB	L	H
8	8	0.53 13.5	0.41 10.3	3.54 90	1.42 36
10	11	0.68 17.2	0.55 14	4.02 102	1.67 42.5
15	18	0.84 21.3	0.71 18.1	4.49 114	2.05 52
20	33	1.06 26.9	0.93 23.7	4.92 125	2.38 60.5
25	60	1.33 33.7	1.17 29.7	5.43 138	2.81 71.5
32	95	1.67 42.4	1.51 38.4	6.14 156	3.09 78.5
40	130	1.90 48.3	1.74 44.3	6.14 156	3.09 78.5
50	760	2.37 60.3	2.22 56.3	6.69 170	3.72 94.5
65	1040	3.00 76.1	2.84 72.1	7.76 197	4.35 110.5
80	1320	3.50 88.9	3.32 84.3	7.76 197	4.37 111
100	2550	4.50 114.3	4.32 109.7	9.53 242	4.43 112.5

Clamp Ends (STRH)

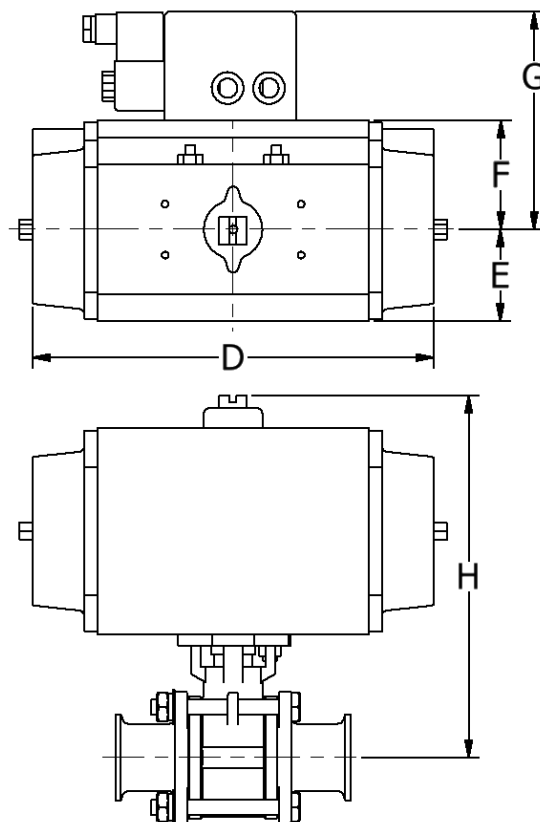


SIZE	CV	ØA	ØB	L	H
8	8	1.00 25.4	0.41 10.3	3.54 90	1.42 36
10	11	1.00 25.4	0.55 14	4.02 102	1.67 42.5
15	18	1.00 25.4	0.71 18.1	4.49 114	2.05 52
20	33	1.99 50.5	0.93 23.7	4.92 125	2.38 60.5
25	60	1.99 50.5	1.17 29.7	5.43 138	2.81 71.5
32	95	2.52 64.0	1.51 38.4	6.14 156	3.09 78.5
40	130	2.52 64.0	1.74 44.3	6.14 156	3.09 78.5
50	760	3.05 77.5	2.22 56.3	6.69 170	3.72 94.5
65	1040	3.58 90.9	2.84 72.1	7.76 197	4.35 110.5
80	1320	4.17 106	3.32 84.3	7.76 197	4.37 111
100	2550	5.12 130	4.32 109.7	9.53 242	4.43 112.5

Note: L dimension does not change when ordering a valve with different style end connections (example: SN-16STRKH-TF-EP1 = 5.43)

Spring Return / Double Acting Actuated Valve Dimensions

SIZE	SPRING RETURN					DOUBLE ACTING				
INCH	D	E	F	G	H	D	E	F	G	H
1/2"	5.21 132.3	1.26 32.0	1.48 37.6	3.21 81.5	5.52 140.2	6.14 156	1.26 32	1.48 37.7	3.21 81.6	5.52 140.2
3/4"	6.14 156	1.26 32	1.48 37.7	3.21 81.6	5.52 140.2	6.14 156	1.26 32	1.48 37.7	3.21 81.6	5.52 140.2
1"	7.44 189	1.42 36	1.81 46	3.54 90	7.05 179	6.14 156	1.26 32	1.48 37.7	3.21 81.6	5.91 150
1.5"	8.46 215	1.65 42	2.05 52	3.78 96	8.19 208	7.44 189	1.42 36	1.81 46	3.54 90	7.83 199
2"	9.96 252.9	2.13 54	2.53 64.3	4.1 104.1	8.59 218.2	8.46 215	1.65 42	2.05 52	3.78 96	8.39 213
2.5"	12.20 310	2.28 58	2.52 64	4.25 108	C/F C/F	9.72 247	1.81 46	2.17 55	3.90 99	C/F C/F
3"	15.47 393	2.66 67.5	2.76 70	4.49 114	12.64 321	12.20 310	2.28 58	2.52 64	4.25 108	11.97 304
4"	18.50 470	2.99 76	3.03 77	4.76 121	13.70 348	15.47 393	2.66 67.5	2.76 70	4.49 114	13.03 331
SIZE	SPRING RETURN					DOUBLE ACTING				
ISO/DN	D	E	F	G	H	D	E	F	G	H
8	C/F C/F	C/F C/F	C/F C/F	C/F C/F	C/F C/F	C/F C/F	C/F C/F	C/F C/F	C/F C/F	C/F C/F
10	5.21 132.3	1.26 32.0	1.48 37.6	3.21 81.5	5.51 140	5.21 132.3	1.26 32.0	1.48 37.6	3.21 81.5	5.51 140
15	7.44 189	1.42 36	1.81 46	3.54 90	7.01 178	5.21 132.3	1.26 32.0	1.48 37.6	3.21 81.5	5.87 149
20	8.46 215	1.65 42	2.05 52	3.78 96	7.72 196	5.21 132.3	1.26 32.0	1.48 37.6	3.21 81.5	6.22 158
25	8.46 215	1.65 42	2.05 52	3.78 96	8.23 209	5.21 132.3	1.26 32.0	1.48 37.6	3.21 81.5	6.73 171
32	9.96 252.9	2.13 54	2.53 64.3	4.1 104.1	8.66 220	8.46 215	1.65 42	2.05 52	3.78 96	8.43 214
40	9.96 252.9	2.13 54	2.53 64.3	4.1 104.1	8.62 219	8.46 215	1.65 42	2.05 52	3.78 96	8.39 213
50	12.20 310	2.28 58	2.52 64	4.25 108	11.38 289	9.72 247	1.81 46	2.17 55	3.90 99	9.41 239
65	15.47 393	2.66 67.5	2.76 70	4.49 114	12.76 324	12.20 310	2.28 58	2.52 64	4.25 108	12.09 307
80	18.50 470	2.99 76	3.03 77	4.76 121	13.74 349	15.47 393	2.66 67.5	2.76 70	4.49 114	13.07 332
100	C/F C/F	C/F C/F	C/F C/F	C/F C/F	C/F C/F	C/F C/F	C/F C/F	C/F C/F	C/F C/F	C/F C/F



SN SERIES PART NUMBER MATRIX:

EXAMPLE: **SN - 16 STR TM - TF - NC**
 1 - 2 3 4 - 5 - 6

Example Part Number Description: 1" SN Series Ball Valve, straight 2-way configuration with tri-clamp (inlet) x tube stub (outlet), PTFE cavity free seats, normally closed air operator, 20 Ra SF1 surface finish comes standard

1. Series Designator

SN - 316L Stainless B.V.

2. Valve Size Designator

06 - 3/8"	(ISO/DN-10)	32 - 2"	(ISO/DN-50)
08 - 1/2"	(ISO/DN-15)	40 - 2.5"	(ISO/DN-65)
12 - 3/4"	(ISO/DN-20)	48 - 3"	(ISO/DN-80)
16 - 1"	(ISO/DN-25)	64 - 4"	(ISO/DN-100)
20 - 1.25"	(ISO/DN-32)		
24 - 1.5"	(ISO/DN-40)		

3. Configuration

STR - Straight Pattern

ST3L - 3-Way L-Pattern

ST3T - 3-Way T-Pattern

4. *End Connections

T - Clamp Fitting (INCH)

M - 316L Tube Extension (INCH)

K - 316 DN/ISO Tube Extension (ISO)

H - Clamp Fitting (ISO)

5. Seat Option

TF - PTFE Cavity Free

6. Options

MP1 - 20 Ra SF1

EP1 - 15 Ra SF4

EP2 - 20 Ra SF5

EP3 - 25 Ra SF6

NC - Normally Closed Air-op

NO - Normally Open Air-op

DA - Double Acting Air-op

24 - 24 VDC Solenoid Assist

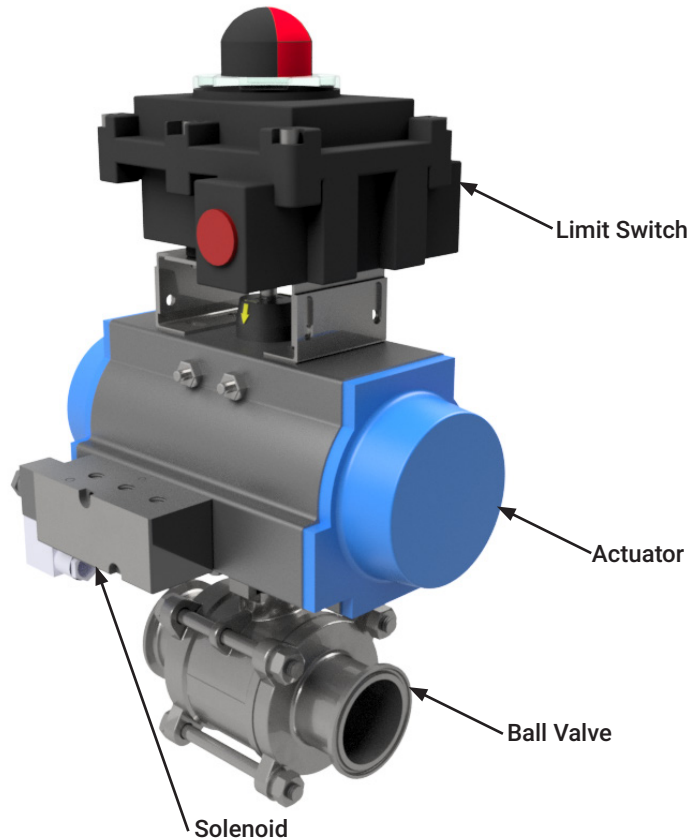
120 - 120 VAC Solenoid Assist

240 - 240 VAC Solenoid Assist

LS - Nema 4.4 X Limit Switch W/ Beacon

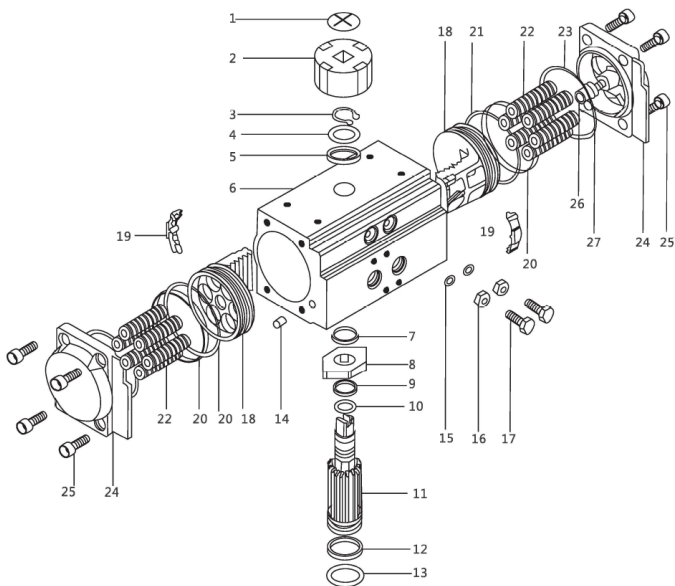
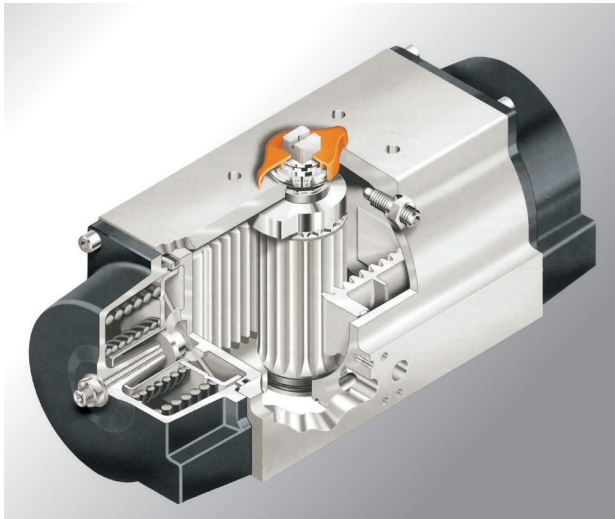
EX - Explosion Proof Option

EXT - Stem Extension



* If inlet/outlet connections types are the same then only use one designator. Example: SN-16STR-TF-MP1 is a 1" ball valve with Tri-clamp fitting connections (inlet/outlet), 20Ra mechanical polish.

Air Actuator Specifications



MATERIAL LIST		
NO.	DESCRIPTION	MATERIAL
1	Indicator screw	Plastic
2	Indicator	Plastic
3	Spring clip	Stainless Steel
4	Washer	Stainless Steel
5	Outer gasket	Engineering plastics
6	Cylinder body	Cast aluminum
7	Inner gasket	Engineering plastics
8	Cam	Alloy steel
9	O-ring (Pinion top)	NBR
10	Bearing (Pinion top)	Engineering plastics
11	Pinion	Alloy steel
12	Bearing (Pinion bottom)	Engineering plastics
13	O-ring (Pinion bottom)	NBR
14	Plug	NBR
15	Adjusting screw O-ring	NBR
16	Adjusting screw nut	Stainless Steel
17	Adjusting bolt	Stainless Steel
18	Piston	Engineering plastics
19	Piston guide	Engineering plastics
20	Piston bearing	Engineering plastics
21	Piston O-ring	NBR
22	Spring	Spring steel
23	End cover O-ring	NBR
24	End cover	Cast aluminum
25	End cover bolt	Stainless Steel
26	Limit bolt	Stainless Steel
27	Limit nut	Stainless Steel

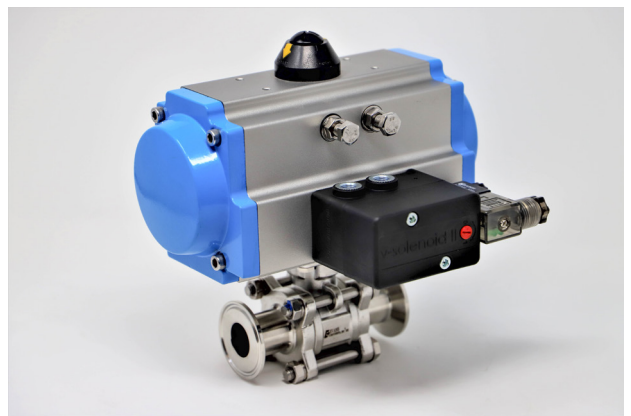
Air Operated Actuator Performance

Operating Pressure Range - Double Acting: 40 to 115PSIG. (2.8 to 8 bar)
Operating Pressure Range - Spring Return: 60 to 115PSIG. (4.1 to 8 bar)
Operating Temperature Standard: -4°F to +176°F (-20 to +80°C)
*Air Inlet/Outlet connections: 1/4 BSP

Solenoid Specifications

V-SOLENOID II - direct mounting Namur solenoid valves for process valve actuators Standard features

- Robust, reliable patented 2 piston / 4 pillar poppet valve design provides bubble-tight shut-off for millions of cycles 5/2 function or 3/2 function selectable via 180° turn of the patented rotary sealing plate Direct NAMUR standard mounting
- Corrosion and impact resistant glass fiber reinforced composite material
- Low maintenance through non lubrication design
- High air flow ($C_v > 1,1$) and fast response
- Exhaust feedback - provides actuator with clean instrument air, preventing corrosion and galling
- Wide operating temperature range: - 40°C to 50°C (-40°F to 125°F)
- Pressure range 2.5 - 8 Bar (35 - 120 PSI)
- Coils easily changed with a wide selection of voltages available
- Coil duty cycle 100%
- Coil can be fixed at any 90° increment
- Manual override with on / off indicator
- Weatherproof IP65
- NEMA types 4 and 4X
- All series CE certified



Limit Switch Specifications

Features

- Enclosure :Weather proof IP67/NEMA4,4X,7,9
- Explosion proof : E EX d IIB T6 – (Optional)
- Solid and Durable design & various options available 3~4 additional switches 8~20 points
- Terminal Strips various options switches - Bolts on visual position indicator –
- Cable entries : 2 x 3/4 NPT
- Terminal Strips : 8 points(0.08-2. 5mm2) –
- Ambient temperature: -20°C~ 80°C (-4°F~ 176°F)
- Position indicator:0 ~ 90 degree(90 turn free join) close:red open:yellow
- Mechanical switch x2 proximity sensor x2
- NAMUR standard stainless steel shaft and stainless steel or steel bracket
- Quick-set cam: Easy to set, splined cam Open-yellow, close-red

Materials

- Body: Aluminum die-casting
- Painting: Powder coating
- Visual Position Indicator: Poly-carbonated Open-Yellow, Close-Red
- Captive Bolts: Stainless steel



Learn more about related Evans Products

EVANS COMPONENTS | Evans PLT Series Presslok® Stainless Tube Fittings/Valves
Tube Size Range: 1/2" thru 4"

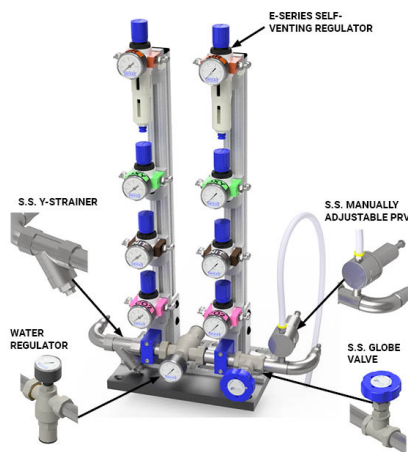


PRESSLOK® GO/NO-GO GAUGES
If Presslok® Go/No-Go Gauge slips over pressed section of fitting, press is acceptable.
If gauge does not slip over pressed section, press is unacceptable.



Bio-reactor Regulator Tree (Sparge/Overlay)

Designed with "Safety and Process Control" in Mind



1 Evans Components Inc.
7606 SW Bridgeport Road, Portland, OR 97224 USA
Phone: 971.249.1600 | Fax: 971.249.1601
www.evanscomponents.com



EVANS COMPONENTS | Evans E-Series
"Low Cost" CFOS Grade Gas Sicks



Options
• Available Size Range: 1/4" (6.4mm) thru 1" (25.4mm)
• Optional 5 Micron Sintered Filter



www.evanscomponents.com

7606 SW Bridgeport Road
Portland, Oregon 97224

Office 971.249.1600

Fax 971.249.1601