Evans SV Series

Vacuum Rated Ball Valves

SV Series
- 1/4” - 2” Sizes
- True Bore Design
- TFM Seats
- Live Loaded Stem Seal
- Viton O-ring Secondary Stem Seal
- Integrated ISO Pad for Air Operator
The Evans SV Series Vacuum Rated Ball Valves. The valves are designed with a true bore I.D. design. Stem seal is live loaded with bevel spring loaded washers that compensates for pressure/vacuum, temperature wear. The SV Series ball valve provides tight shutoff and has exceptional cycle life performance. The live loaded stem with secondary Viton O-ring seal makes this valve ideal for vacuum applications up to a 1 x 10-9 scc/sec helium leak rate.

Features & Specifications:

Stem: Live loaded PTFE/RTFE design with secondary Viton O-ring seal for better vacuum rating and increased cycle life  
Seats: TFM 1600  
Max Pressure Rating: 1/2” - 2” 1000 psig / 63 bar  
Temperature Range: -4 to 356F / -20 to 180C  
Helium Leak Tested: 1 x 10-9 scc/sec  
Options: Air Operators, Solenoid assist, Limit switch  

Ball Valve Material

Body, Cap: ASTM A351 Gr. CF8M or ASTM A351 Gr. CF3M  
Ball, Stem: SS 316 or SS 316L  
Stem Seal: PTFE, Viton  
Seats: TFM 1600  
KF/NW Clamp Style Flange: ASTM A351 Gr. CF8M or ASTM A351 Gr.  
Butt-weld Flange: ASTM A351 Gr. CF3M (316L), Sulfur content between 0.005% and 0.017%  

True Port Body & Stem Construction

The ball valve construction is designed in accordance with ANSI B16.34. 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. The stem assembly incorporates a live loaded bevel spring design with Viton O-ring. This design compensates for pressure, temperature and wear. The high performance stem seal design makes the valve ideal for vacuum and high cycle applications. The stem is highly polished for better sealing and the handle comes standard with lockout feature.
## Manual Materials of Construction

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Dimensions are +/- .03"  
*CIF - Consult Factory*
Air Operated Valve Dimensions

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Dimensions are +/- 0.3”
*C/F - Consult Factory

Evans Components Inc.
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Phone 971-249-1600 · Fax 971-249-1601 · www.evanscomponents.com
### Part Numbering

<table>
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<th>SV Series</th>
<th>16 Size</th>
<th>STR Configuration</th>
<th>N End Conn.</th>
<th>TF Seat</th>
<th>NC Options</th>
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</table>

#### 1. Series Designator

SV - 316L Stainless B.V.

#### 2. Valve Size Designator

08 - 1/2”
12 - 3/4”
16 - 1”
24 - 1-1/2”
32 - 2”

#### 3. Configuration

STR - Straight Pattern

#### 4. End Connections

N - NW/KF Flange
I - ISO Flange
M - 316L Tube Extension
C - Compression
R - Male Face Seal

#### 5. Seat Option

TF - TFM 1600

#### 6. Options

**Air Actuators**
NC - Normally Closed Air-op
NO - Normally Open Air-op
DA - Double Acting Air-op

**Solenoid Assist / Limit Switch**
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

**15 Ra Electropolish**
E - Ball I.D. & End Connection
### Air Operator, Limit Switch and Solenoid Specifications

#### Limit Switch Specifications

**Area Classification:** NEMA 4, 4X, Explosion proof (optional)

**Enclosure:** Terminal Strip 8 point standard

#### Materials of Construction

- **Housing & Cover:** Engineered Resin
- **Shaft:** Stainless Steel
- **Fasteners:** Stainless Steel
- **Beacon Monitor:** Copolyester

#### Performance

**Operating Pressure Range:** 40 to 120PSIG

**Maximum Allowable Working Pressure:** 150PSIG

**Maximum Operating Pressure:** 120PSIG

**Operating Temperature Standard:** -40°F to +200°F

#### Operation

For clockwise output, the volume between the pistons is exhausted at P1, causing the springs to force the pistons together. The volume outside the pistons is vented at P2.

For counterclockwise output, apply pressure to P1, which force the pistons apart and compress the springs. The linear travel of the pistons is converted to a rotation of the drive shaft by the rack to pinion connection. The volume outside each piston is exhausted at P2.
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 (Cv > 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