

Triplex Sales  
1-847-839-8442  
www.triplexsales.com



# EnviZion® & BioviZion®

Hygienic Diaphragm Valves



**ITT**



# EnviZion Valve

## Experience the Future with EnviZion

The Biopharm industry relies on hygienic diaphragm valves for demanding process applications due to their unique balance of clean-ability, drain-ability and pressure/temperature capability. For more than 40 years the technology of these valves has changed very little. Advances in performance have been nominal as the basic design concept has remained the same: body, diaphragm, topworks, and four fasteners. This design requires experienced personnel and stringent maintenance practices to assure consistent, reliable valve performance. All while the industry is forced to increase productivity, extend preventative maintenance intervals, and reduce operating costs.

ITT's breakthrough technology, the EnviZion valve, sets a new standard for the future of hygienic diaphragm valves. The EnviZion valve is designed specifically to help customers install, operate, and maintain their valves more efficiently. This unique design provides a significant reduction in total cost of ownership while supporting the industries' goals to increase productivity, improve reliability and enhance clean-ability.



**TOOL-LESS  
ASSEMBLY**



**QUICK  
CHANGE  
BONNET**



**CONTAMINATION  
FREE**



**SEALING SYSTEM  
3RD PARTY  
CERTIFIED**



**LEAK FREE  
SEAL INTEGRITY**



**FASTENER FREE**



**ZERO  
RETORQUES**

# EnviZion Valve

Valve maintenance as easy as 1-2-3



1. Unscrew Cover CCW



2. Rotate Bonnet



3. Lift Bonnet off Studs

The EnviZion valve utilizes a breakthrough mount and turn design that allows for quick and easy valve disassembly.

- Tool-less maintenance - no tools required for valve installation and diaphragm replacement, simplifying the maintenance process.
- Fasteners eliminated - no more handling loose parts or accessing fasteners in tight spaces.
- Save time - diaphragm changes reduced from an industry average of 23 minutes to 3 minutes, resulting in a 90% reduction in maintenance time.



## Reliable Sealing and Improved Cleanability with No Re-Torques

The EnviZion valve eliminates the effects of thermal cycling with an integrated thermal compensation system.

- Active sealing technology - the constant force of the thermal compensation system provides a reliable seal that does not degrade over time (unlike other diaphragm valve designs that use passive sealing technology).
- No retorquing - the seal is maintained over varying operating conditions, eliminating the need to adjust fasteners after thermal cycling.

The EnviZion valve improves clean-ability by reducing the potential for fluid entrapment.

- Diaphragm seal - the valve body and diaphragm create a seal on the leading edge of the D-section, preventing fluid from getting into areas which would be difficult to clean and possibly lead to process contamination.

**Net result - reduced maintenance hours, commissioning costs and potential for system contamination.**

# EnviZion Valve

## Total Cost of Ownership

The EnviZion valve platform was developed with one overarching goal – to reduce the customer’s total cost of ownership (TCO). Costs associated with installation, validation, operation, and maintenance are significantly reduced with the EnviZion valve.

- Over 90% annual maintenance cost savings is achieved by reducing the time required to change diaphragms.
- No retorquing after thermal cycling reduces start up time and maintenance cost.
- EHEDG certified sealing system reliably eliminates the potential for contamination.
- Preventative maintenance intervals can be extended, saving time and cost.
- Production capacity is optimized and unscheduled downtime and investigation costs are minimized.



EnviZion valve has been evaluated for compliance and meets the current criteria for Hygienic Equipment Design of the EHEDG.

## EnviZion Valve Value Proposition

| QUICK CHANGE BONNET | ACTIVE 360 SEAL |   | User Benefit  | User Value |
|---------------------|-----------------|---|---|------------|
| ✓                   |                 | ✓ | Reduced installation time                                     | \$\$       |
|                     | ✓               |   | Eliminates re-torque time (CIP, SIP)                          | \$\$       |
|                     | ✓               |   | Efficient system pressure checks / reduced investigation time | \$\$\$     |
|                     | ✓               |   | Increased production capacity (less downtime)                 | \$\$\$\$   |
|                     | ✓               |   | Reduced product loss (no contamination)                       | \$\$\$\$   |
|                     | ✓               |   | Reduced unscheduled down time                                 | \$\$\$     |
|                     | ✓               |   | Reduction of Investigation time / cost                        | \$\$\$     |
| ✓                   |                 | ✓ | Reduced diaphragm change time (10x)                           | \$\$\$     |
| ✓                   |                 |   | Operators vs maintenance for diaphragm changes                | \$\$       |
|                     |                 | ✓ | Eliminates fastener replacements / galling issues             | \$         |

Installation      Operation      Maintenance

Technology delivers significant value and cost benefits



# Valve Bodies

## Forged (2-Way)

Size: 0.25-2inch (DN6-50)  
End Connections: Tri-Clamp®,  
16 O.D. Gauge Tubing, DIN  
11850

Material: Tri-certified 316L  
stainless steel, sulfur  
controlled per ASME BPE  
(ASTM A182 grade 316L, S9,  
EN 10222-5 EN 1.4435, BN2)

Dimensional Standards: USOD Tubing, DIN  
Patented



## Wrought (Block Bodies)

Size: 0.5-2 inch (DN15-50)

End Connections:  
Tri-Clamp®, 16 O.D.  
Gauge Tubing, Schedule  
piping (5, 10, 40), ISO,  
DIN 11850

ISO 2852, DIN 32676, BS  
4825 Part 3 compliant ends  
(EHEDG)

Material: 316L stainless steel ASTM A479, A240, 316L  
Special Alloys<sup>1</sup>: C22, C276, AL6XN

Dimensional Standards: USOD Tubing, Pipe, ISO/DIN

<sup>1</sup> Other materials available upon request  
Patented



## Surface Finishes

10 – 25 Ra\* (.25 $\mu$ m - 0.6  $\mu$ m)

Interior & exterior electropolish available

\*25 Ra standard polish

# Topworks

## Standard Features (All Bonnets)

Bonnet Material:

- Stainless steel
- Handwheel/Bonnet Cover: FDA 21CFR177.1660 compliant PES

Standard Features:

- Autoclavable
- Thermal compensation system
- Visual position indication
- Weep hole

Corrosion Resistance: Resistant to common industry washdowns.

Consult factory for specific chemical resistance.

## Actuated Advantage® Bonnet

Type: ZB1, ZB2, ZB3, ZB1S (sealed), ZB2S (sealed), ZB3S (sealed)

Size: 1-2 inch (DN25-50)

Operating Modes: Fail Closed, Fail Open, Double Acting

Actuator Material: Glass reinforced polyethersulfone (PES)

Standard Features:

- Safety lock-pin
- 360 degree air port rotation
- 60# and 90# spring packages (Fail Closed)



## BioviZion Manual Bonnet

Type: BV ZH,ZHS

Size: 0.25, 0.375, 0.5

Safety Lock Screw (sealed)

Travel stop



## BioviZion Actuated Bonnet

Type: BV ZA,ZAS

Size: 0.25, 0.375, 0.5

Operating modes: Fail Closed, Fail Open, Double Acting

Standard Features:

- Safety lock-pin
- 360 degree air port rotation
- 60# and 90# spring packages (Fail Closed)



## Standard Manual Bonnet

Type: ZH, ZHS (sealed)

Size: .5-2 inch (DN15-50)

Standard Features:

- Safety lock-pin
- Travel stop

Patented



## Actuated Stainless Steel Bonnet

Type: ZA1, ZA2, ZA3, ZA1S (sealed), ZA2S (sealed), ZA3S (sealed)

Size: .5-2 inch (DN15-50)

Operating Modes: Fail Closed, Fail Open, Double Acting

Actuator Material: Stainless steel

Standard Features:

- Safety lock-pin
- 0.5 inch: 360 degree air port rotation

Patented

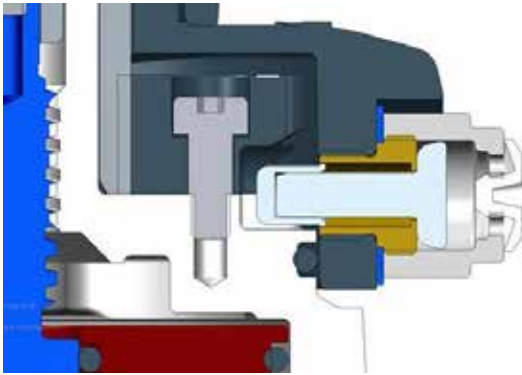




# Accessories

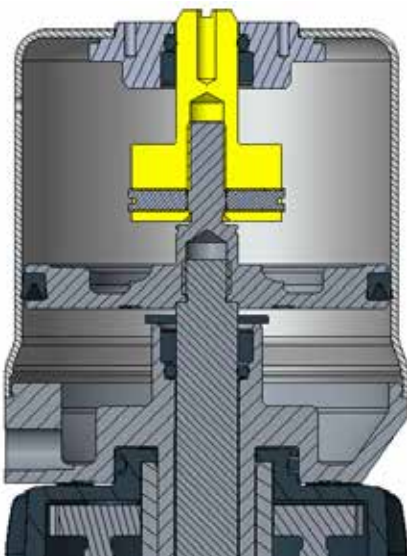
## EnviZion Bonnet Guard (EBG) Tamper Resistant / Submersible Option:

- Modified Plunger design maintains "drop in" feature for assembly
- Plunger cover seals & isolates plunger
  - Tool required to remove
- Autoclave capable stainless steel cover with small hex socket
- Umbrella vent seal to avoid pressurization if diaphragm fails
- Sealed hand wheel screw



## Adjustable Opening Stop (AOS)

External adjustment of valve flow rate.  
Spindle screw slot



# EnviZion Valve Diaphragms

## Diaphragms

The EnviZion diaphragm has been developed to withstand the wear of today's production cycles and maintains a reliable seal, avoiding the risk of leakage and batch contamination. It combines advanced technology with proven materials that are used extensively in the Pharmaceutical and Biopharm industries.

Featuring a robust 2-piece construction, the EnviZion diaphragm utilizes the same modified PTFE material as the Pure-Flo series of valves with an enhanced EPDM backing cushion. The diaphragm design has been optimized to maximize sealing efficiency while minimizing stresses during operation.

Type: TMZ  
Patented

### Temperature Rating:

- 20°C to 165°C (-4°F to 329°F)
- 30°C to 140°C (-22°F to 285°F) for continuous steam
- 30°C to 150°C (-22°F to 302°F) for intermittent steam

### Material (2-Piece Construction):

- Product Contact Surface: Modified PTFE
- Backing Cushion: Grade B1 EPDM
- Lot code traceable

### Regulatory Compliance:

- PTFE: 21CFR 177.1550 (a)
- EPDM Backing cushion: 21 CFR 177.2600
- USP Class VI, Chapter <87>, <88> (70°C and 121°C)
- EMEA 410 compliant

PTFE Product Contact Surface



EPDM Backing Cushion



## EnviZion Diaphragm Connection as easy as 1-2-3



1. Align diaphragm stud head with compressor slot



2. Push diaphragm stud into compressor slot



3. Rotate 90°





# Actuator Sizing

| Valve Size       | Biovizion   |            | 0.5" (DN 15) |           | 0.75" (DN 20) |          | 0.75"R (DN 20) |           | 1" (DN 25) |          | 1.5" (DN 40) |           | 2.0" (DN 50) |          |
|------------------|---|------------|--------------|-----------|---------------|----------|----------------|-----------|------------|----------|--------------|-----------|--------------|----------|
| ΔP               | 100%  | 0%         | 100%         | 0%        | 100%          | 0%       | 100%           | 0%        | 100%       | 0%       | 100%         | 0%        | 100%         | 0%       |
| Actuator Model   | Fail Closed - Reverse Acting - Spring to Close<br>Maximum Line Pressure (psi/(bar)) |            |              |           |               |          |                |           |            |          |              |           |              |          |
| ZA2/ZA2S         | 150 (10.3)  | 150 (10.3) | 150 (10.3)   | 135 (9.3) | 150 (10.3)    | 70 (4.8) | 150 (10.3)     | 135 (9.3) | 150 (10.3) | 70 (4.8) | 150 (10.3)   | 90 (6.2)  | 130 (9.0)    | 65 (4.5) |
| ZA26/ZA26S (60#) | 65 (4.5)  | 58 (4.0)   | 150 (10.3)   | 83 (5.7)  |               |          | 150 (10.3)     | 83 (5.7)  |            |          |              |           |              |          |
| ZB2/ZB2S         |   |            |              |           | 135 (9.3)     | 80 (5.5) |                |           | 135 (9.3)  | 80 (5.5) | 150 (10.3)   | 104 (7.2) | 150 (10.3)   | 87 (6.0) |
| ZB26/ZB26S (60#) |   |            |              |           | 30 (2.1)      | 30 (2.1) |                |           | 30 (2.1)   | 30 (2.1) | 52 (3.6)     | 52 (3.6)  | 57 (3.9)     | 30 (2.1) |

| Valve Size     | Biovizion   |          | 0.5" (DN 15) |          | 0.75" (DN 20) |          | 0.75"R (DN 20) |          | 1" (DN 25) |          | 1.5" (DN 40) |          | 2.0" (DN 50) |           |
|----------------|---|----------|--------------|----------|---------------|----------|----------------|----------|------------|----------|--------------|----------|--------------|-----------|
| ΔP             | 100%  | 0%       | 100%         | 0%       | 100%          | 0%       | 100%           | 0%       | 100%       | 0%       | 100%         | 0%       | 100%         | 0%        |
| Actuator Model | Fail Open - Direct Acting - Spring to Open<br>Air pressure required to shut-off line pressure (psi/(bar)) |          |              |          |               |          |                |          |            |          |              |          |              |           |
| Line Pressure  |   |          |              |          |               |          |                |          |            |          |              |          |              |           |
| ZA1/ZA1S       | 20  | 67 (4.6) | 67 (4.6)     | 45 (3.1) | 45 (3.1)      | 45 (3.1) | 45 (3.1)       | 45 (3.1) | 45 (3.1)   | 45 (3.1) | 66 (4.6)     | 66 (4.6) | 78 (5.4)     | 80 (5.5)  |
| ZA1/ZA1S       | 40  | 69 (4.8) | 69 (4.7)     | 48 (3.3) | 50 (3.4)      | 50 (3.4) | 53 (3.7)       | 48 (3.3) | 50 (3.4)   | 53 (3.7) | 70 (4.8)     | 72 (5.0) | 82 (5.7)     | 90 (6.2)  |
| ZA1/ZA1S       | 60  | 72 (5.0) | 72 (5.0)     | 51 (3.5) | 54 (3.7)      | 54 (3.7) | 62 (4.3)       | 51 (3.5) | 54 (3.7)   | 62 (4.3) | 73 (5.0)     | 79 (5.4) | 86 (5.9)     | 100 (6.9) |
| ZA1/ZA1S       | 80  | 74 (5.1) | 74 (5.1)     | 54 (3.7) | 59 (4.1)      | 59 (4.1) | 70 (4.8)       | 54 (3.7) | 59 (4.1)   | 70 (4.8) | 76 (5.2)     | 85 (5.9) | 90 (6.2)     |           |
| ZA1/ZA1S       | 100   | 76 (5.2) | 77 (5.3)     | 57 (3.9) | 63 (4.3)      | 63 (4.3) | 79 (5.4)       | 57 (3.9) | 63 (4.3)   | 79 (5.4) | 79 (5.4)     | 91 (6.3) | 95 (6.5)     |           |
| ZA1/ZA1S       | 125   | 79 (5.4) | 81 (5.6)     | 61 (4.2) | 69 (4.8)      | 69 (4.8) | 89 (6.1)       | 61 (4.2) | 69 (4.8)   | 89 (6.1) | 83 (5.7)     | 99 (6.8) | 100 (6.9)    |           |
| ZA1/ZA1S       | 150   | 82 (5.7) | 84 (5.8)     | 65 (4.5) | 75 (5.2)      | 75 (5.2) | 100 (6.9)      | 65 (4.5) | 75 (5.2)   | 75 (5.2) | 100 (6.9)    | 87 (6.0) |              |           |

|          |     |  |  |  |  |          |          |  |  |          |          |          |          |          |          |
|----------|-----|--|--|--|--|----------|----------|--|--|----------|----------|----------|----------|----------|----------|
| ZB1/ZB1S | 20  |  |  |  |  | 44 (3.0) | 44 (3.0) |  |  | 44 (3.0) | 44 (3.0) | 39 (2.7) | 39 (2.7) | 41 (2.8) | 44 (3.0) |
| ZB1/ZB1S | 40  |  |  |  |  | 47 (3.2) | 48 (3.3) |  |  | 47 (3.2) | 48 (3.3) | 42 (2.9) | 44 (3.0) | 48 (3.3) | 52 (3.6) |
| ZB1/ZB1S | 60  |  |  |  |  | 50 (3.4) | 56 (3.9) |  |  | 50 (3.4) | 56 (3.9) | 45 (3.1) | 51 (3.5) | 55 (3.8) | 60 (4.2) |
| ZB1/ZB1S | 80  |  |  |  |  | 53 (3.7) | 64 (4.4) |  |  | 53 (3.7) | 64 (4.4) | 49 (3.4) | 58 (4.0) | 62 (4.3) | 68 (4.7) |
| ZB1/ZB1S | 100 |  |  |  |  | 56 (3.9) | 73 (5.0) |  |  | 56 (3.9) | 73 (5.0) | 52 (3.6) | 65 (4.5) | 69 (4.8) | 76 (5.3) |
| ZB1/ZB1S | 125 |  |  |  |  | 59 (4.1) | 83 (5.7) |  |  | 59 (4.1) | 83 (5.7) | 56 (3.9) | 74 (5.1) | 77 (5.3) | 86 (5.9) |
| ZB1/ZB1S | 150 |  |  |  |  | 63 (4.3) |          |  |  | 63 (4.3) |          | 60 (4.1) | 83 (5.7) | 88 (6.1) |          |

| Actuator Model | Line Pressure | Double Acting - Air to Open Air to Close<br>Air pressure required to shut-off line pressure (psi/(bar)) |          |          |          |          |          |          |          |          |          |          |          |          |          |
|----------------|---------------|---|----------|----------|----------|----------|----------|----------|----------|----------|----------|----------|----------|----------|----------|
| ZA3/ZA3S       | 20            | 43 (3.0)  | 43 (3.0) | 30 (2.1) | 17 (1.2) | 30 (2.1) | 30 (2.1) | 30 (2.1) | 30 (2.1) | 30 (2.1) | 30 (2.1) | 17 (1.2) | 18 (1.2) | 27 (1.9) | 27 (1.9) |
| ZA3/ZA3S       | 40            | 45 (3.1)  | 45 (3.1) | 33 (2.3) | 22 (1.5) | 35 (2.4) | 38 (2.6) | 33 (2.3) | 35 (2.4) | 35 (2.4) | 38 (2.6) | 20 (1.4) | 26 (1.8) | 31 (2.1) | 35 (2.4) |
| ZA3/ZA3S       | 60            | 48 (3.3)  | 48 (3.3) | 36 (2.5) | 27 (1.9) | 39 (2.7) | 47 (3.2) | 36 (2.5) | 39 (2.7) | 39 (2.7) | 47 (3.2) | 23 (1.6) | 35 (2.4) | 34 (2.3) | 44 (3.0) |
| ZA3/ZA3S       | 80            | 50 (3.4)  | 50 (3.4) | 39 (2.7) | 32 (2.2) | 44 (3.0) | 55 (3.8) | 39 (2.7) | 44 (3.0) | 44 (3.0) | 55 (3.8) | 27 (1.9) | 43 (3.0) | 38 (2.6) | 52 (3.6) |
| ZA3/ZA3S       | 100           | 52 (3.6)  | 52 (3.6) | 42 (2.9) | 37 (2.5) | 48 (3.3) | 64 (4.4) | 42 (2.9) | 48 (3.3) | 48 (3.3) | 64 (4.4) | 30 (2.1) | 51 (3.5) | 41 (2.8) | 61 (4.2) |
| ZA3/ZA3S       | 125           | 55 (3.8)  | 56 (3.9) | 46 (3.2) | 43 (3.0) | 54 (3.7) | 74 (5.1) | 46 (3.2) | 54 (3.7) | 54 (3.7) | 74 (5.1) | 34 (2.3) | 62 (4.3) | 46 (3.1) | 72 (5.0) |
| ZA3/ZA3S       | 150           | 58 (4.0)  | 60 (4.1) | 50 (3.4) | 49 (3.4) | 60 (4.1) | 85 (5.9) | 50 (3.4) | 60 (4.1) | 60 (4.1) | 85 (5.9) | 38 (2.6) | 72 (5.0) | 50 (3.4) | 83 (5.7) |
| ZB3/ZB3S       | 20            |   |          |          |          | 34 (2.3) | 39 (2.7) |          |          | 34 (2.3) | 39 (2.7) | 26 (1.8) | 26 (1.8) | 30 (2.1) | 30 (2.1) |
| ZB3/ZB3S       | 40            |   |          |          |          | 37 (2.6) | 48 (3.3) |          |          | 37 (2.6) | 48 (3.3) | 30 (2.1) | 32 (2.2) | 37 (2.6) | 41 (2.9) |
| ZB3/ZB3S       | 60            |   |          |          |          | 40 (2.8) | 57 (3.9) |          |          | 40 (2.8) | 57 (3.9) | 34 (2.3) | 40 (2.8) | 44 (3.0) | 52 (3.6) |
| ZB3/ZB3S       | 80            |   |          |          |          | 44 (3.0) | 65 (4.5) |          |          | 44 (3.0) | 65 (4.5) | 38 (2.6) | 47 (3.2) | 51 (3.5) | 62 (4.3) |
| ZB3/ZB3S       | 100           |   |          |          |          | 47 (3.2) | 75 (5.2) |          |          | 47 (3.2) | 75 (5.2) | 41 (2.8) | 55 (3.8) | 58 (4.0) | 73 (5.1) |
| ZB3/ZB3S       | 125           |   |          |          |          | 51 (3.5) | 86 (5.9) |          |          | 51 (3.5) | 86 (5.9) | 46 (3.1) | 64 (4.4) | 66 (4.6) | 87 (6.0) |
| ZB3/ZB3S       | 150           |   |          |          |          | 55 (3.8) |          |          |          | 55 (3.8) |          | 51 (3.5) | 73 (5.0) | 75 (5.2) |          |

Note: Fail closed actuators require 90 psi (6 bar) instrument air to achieve full open with 0 psi/bar line pressure (except ZA26 and ZB26 which require 60 psi (4 bar) to open). The exposure of PTFE diaphragms to steam may reduce shutoff capabilities or increase air required to shut off by as much as 30%.

## Cv/Kv Ratings for Manual and Actuated (SS)

| Size (in) | BV 0.5" (DN15) |      | 0.5" (DN 15) |      | 0.75" (DN 20) |      | 0.75"R (DN 20) |      | 1" (DN 25) |       | 1.5" (DN 40) |       | 2" (DN 50) |       |
|-----------|----------------|------|--------------|------|---------------|------|----------------|------|------------|-------|--------------|-------|------------|-------|
| Cv/Kv     | Cv             | Kv   | Cv           | Kv   | Cv            | Kv   | Cv             | Kv   | Cv         | Kv    | Cv           | Kv    | Cv         | Kv    |
| 25% Open  |                |      | 1.4          | 1.21 | 3.9           | 3.37 | 1.4            | 1.22 | 4.4        | 3.81  | 6.3          | 5.45  | 9.1        | 7.88  |
| 50% Open  |                |      | 2.5          | 2.16 | 7.4           | 6.40 | 2.9            | 2.51 | 9.5        | 8.22  | 17.3         | 14.98 | 24.9       | 21.56 |
| 75% Open  |                |      | 2.9          | 2.51 | 9.6           | 8.30 | 3.8            | 3.29 | 12.4       | 10.73 | 29.4         | 25.45 | 42.7       | 36.97 |
| 100% Open | 2.1            | 1.83 | 3            | 2.60 | 10            | 8.65 | 4.5            | 3.89 | 14         | 12.11 | 37.1         | 32.12 | 51.2       | 44.33 |

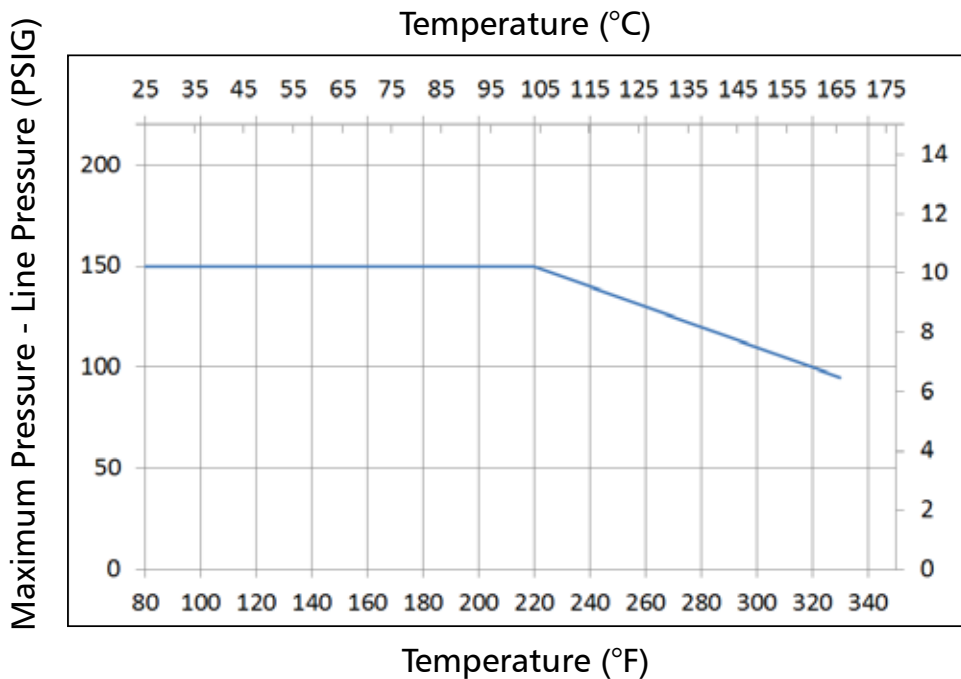
## Cv/Kv Ratings for Advantage Actuator

| Size (in) | 0.75" (DN 20) |      | 1" (DN 25) |       | 1.5" (DN 40) |       | 2" (DN 50) |       |
|-----------|---------------|------|------------|-------|--------------|-------|------------|-------|
| Cv/Kv     | Cv            | Kv   | Cv         | Kv    | Cv           | Kv    | Cv         | Kv    |
| 25% Open  | 3.9           | 3.37 | 4.4        | 3.81  | 6.3          | 5.45  | 8          | 7.15  |
| 50% Open  | 7.4           | 6.40 | 9.5        | 8.22  | 17.3         | 14.98 | 20         | 17.89 |
| 75% Open  | 9.6           | 8.30 | 12.4       | 10.73 | 29.4         | 25.45 | 35         | 31.31 |
| 100% Open | 10            | 8.65 | 14         | 12.11 | 37.1         | 32.12 | 46         | 41.15 |

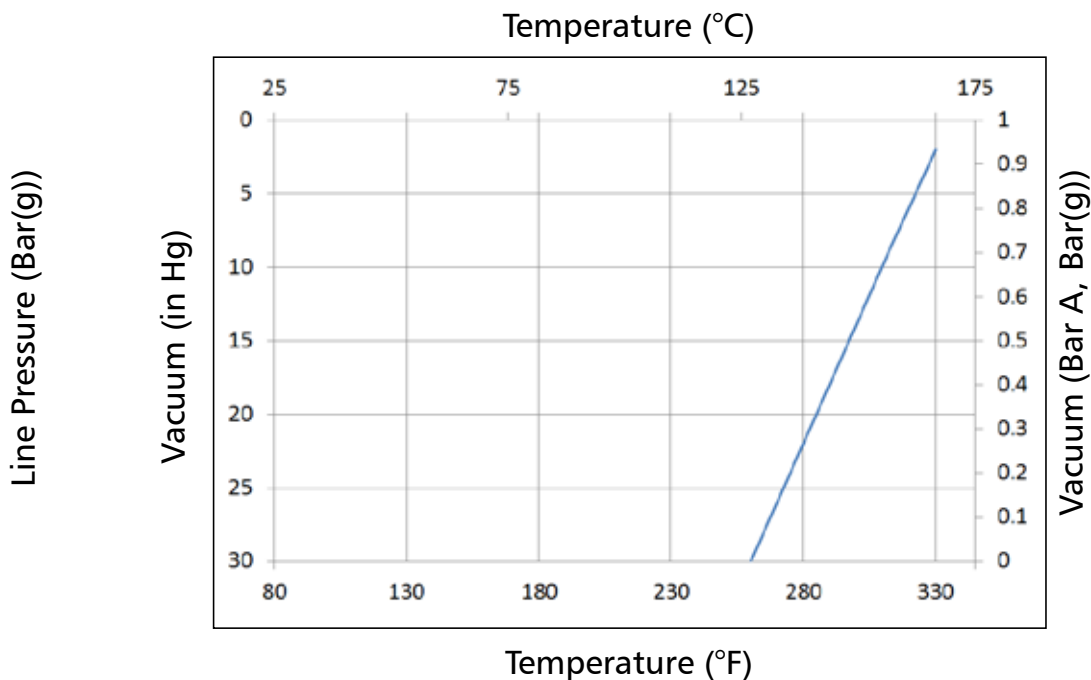
Cv units = GPM with 1 psi pressure drop across valve. Kv = m<sup>3</sup>/hr with 1 Kg/cm<sup>2</sup> pressure drop across the valve

# Pressure/Temperature Recommendations

Pressure/Temperature Recommendations



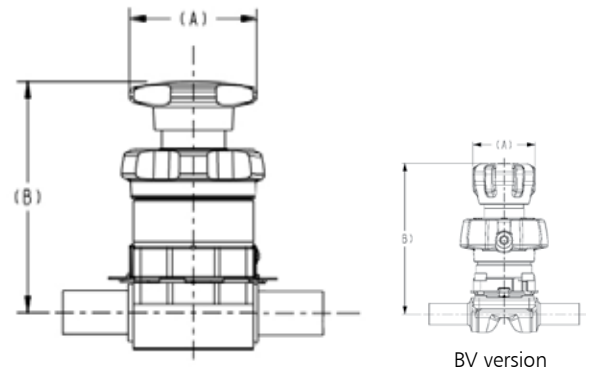
EnviZion Diaphragms for Vacuum Service



# Weights and Dimensions

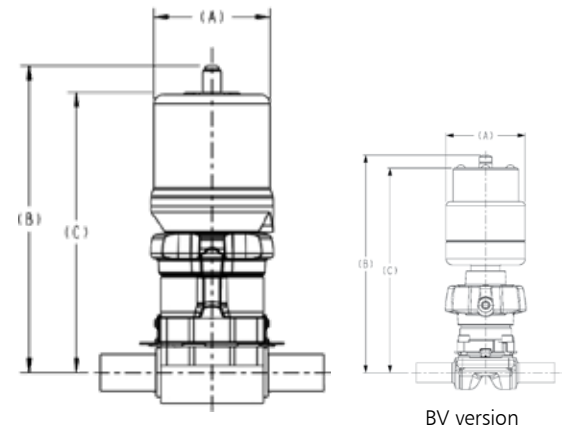
## EnviZion and BioviZion Manual Bonnet

| Valve Size |       | A    |      | B    |       | Bonnet Weight |      |
|------------|-------|------|------|------|-------|---------------|------|
| Inch       | DN    | Inch | mm   | Inch | mm    | Lbs           | kg   |
| BV 0.50    | BV 15 | 1.45 | 36,8 | 3.51 | 89,2  | 0.7           | 0.28 |
| 0.50       | 15    | 2.05 | 52,1 | 4.04 | 102,5 | 1.3           | 0.6  |
| 0.75       | 20    | 2.95 | 74,9 | 5.30 | 134,6 | 3.5           | 1.6  |
| 0.75R      | 20    | 2.05 | 52,1 | 4.04 | 102,5 | 3.5           | 1.6  |
| 1.00       | 25    | 2.95 | 74,9 | 5.30 | 134,6 | 3.5           | 1.6  |
| 1.50       | 40    | 3.89 | 98,8 | 7.09 | 180,1 | 7.3           | 3.3  |
| 2.00       | 50    | 3.89 | 98,8 | 7.69 | 195,4 | 8.5           | 3.8  |



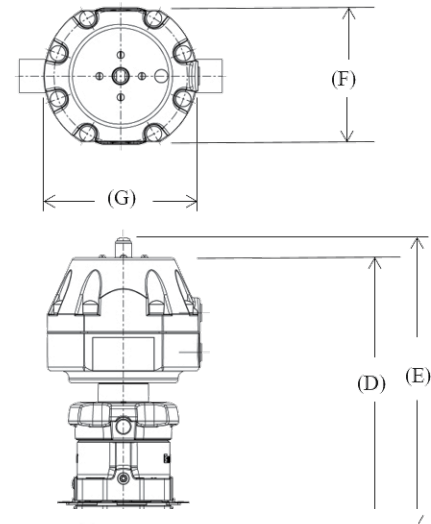
## EnviZion and BioviZion Actuator (ZA Series)

| Valve Size |       | A    |       | B     |       | C     |       | Bonnet Weight |      |
|------------|-------|------|-------|-------|-------|-------|-------|---------------|------|
| Inch       | DN    | Inch | mm    | Inch  | mm    | Inch  | mm    | Lbs           | kg   |
| BV 0.50    | BV 15 | 2.00 | 50,8  | 5.54  | 140,7 | 5.21  | 132,3 | 1.9           | 0.85 |
| 0.50       | 15    | 2.62 | 66,5  | 6.56  | 166,7 | 6.04  | 153,4 | 3.1           | 1.4  |
| 0.75       | 20    | 3.12 | 79,4  | 8.22  | 208,7 | 7.51  | 190,7 | 6.2           | 2.8  |
| 0.75R      | 20    | 2.62 | 66,5  | 6.56  | 166,7 | 6.04  | 153,4 | 3.1           | 1.4  |
| 1.00       | 25    | 3.12 | 79,4  | 8.22  | 208,7 | 7.51  | 190,7 | 6.2           | 2.8  |
| 1.50       | 40    | 4.62 | 117,3 | 12.08 | 306,8 | 11.18 | 284,0 | 17.9          | 8.2  |
| 2.00       | 50    | 4.62 | 117,3 | 12.68 | 322,1 | 11.49 | 291,7 | 18.5          | 8.4  |

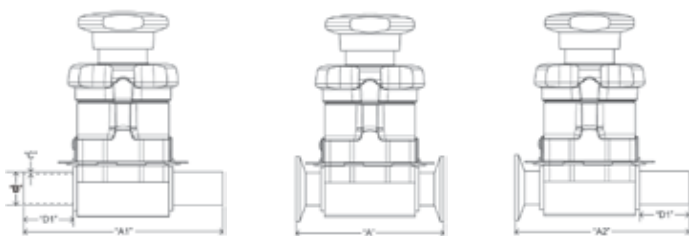


## EnviZion Advantage Actuator (ZB Series)

| Valve Size |    | D     |     | E     |     | F    |     | G    |     | Bonnet Weight |     |
|------------|----|-------|-----|-------|-----|------|-----|------|-----|---------------|-----|
| Inch       | DN | Inch  | mm  | Inch  | mm  | Inch | mm  | Inch | mm  | Lbs           | kg  |
| 0.75       | 20 | 8.03  | 204 | 8.61  | 219 | 4.56 | 116 | 3.88 | 98  | 6.3           | 2.9 |
| 1.00       | 25 | 8.03  | 204 | 8.61  | 219 | 4.56 | 116 | 3.88 | 98  | 6.3           | 2.9 |
| 1.50       | 40 | 11.84 | 301 | 12.67 | 322 | 6.41 | 163 | 5.94 | 151 | 18.9          | 8.6 |
| 2.00       | 50 | 12.14 | 309 | 13.10 | 333 | 6.41 | 163 | 5.94 | 151 | 19.7          | 8.9 |



## Body Dimensions



| USOD (ANSI)         |                |                |              |                |             | Drain Angles |      |     |     |
|---------------------|----------------|----------------|--------------|----------------|-------------|--------------|------|-----|-----|
| B                   |                | A              | A1           | D1             | A2          | C            | ANSI | ISO | DIN |
| End Connection Size | Overall Length | Overall Length | Weld Tangent | Overall Length | Tube wall   |              |      |     |     |
| IN                  | DN             | Tri Clamp      | Extended BW  | Extended BW    | TC x BW     | Extended BW  |      |     |     |
| Forgings            |                |                |              |                |             |              |      |     |     |
| BV 0.25"            | DN6            | 2.5" (64)      | 3.5" (89)    | 1" (25)        | 3.0" (76,2) | .035 (0,89)  | 32°  | -   | -   |
| BV 0.375"           | DN10           | 2.5" (64)      | 3.5" (89)    | 1" (25)        | 3.0" (76,2) | .035 (0,89)  | 25°  | -   | -   |
| BV 0.5"             | DN15           | 2.5" (64)      | 3.5" (89)    | 1" (25)        | 3.0" (76,2) | .065 (1,65)  | 20°  | -   | -   |
| 0.5"                | DN15           | 3.5" (89)      | 5.22" (133)  | 1.5" (38)      | 4.36 (111)  | .065 (1,65)  | 27°  | TBD | TBD |
| 0.75"               | DN20           | 4" (102)       | 6.00" (152)  | 1.5" (38)      | 5.00 (127)  | .065 (1,65)  | 36°  | TBD | TBD |
| 0.75R               | DN20           | 4" (102)       | 6.00" (152)  | 1.5" (38)      | 5.00 (127)  | .065 (1,65)  | 16°  | TBD | TBD |
| 1"                  | DN25           | 4.5" (114)     | 6.00" (152)  | 1.5" (38)      | 5.25 (133)  | .065 (1,65)  | 30°  | TBD | TBD |
| 1.5"                | DN40           | 5.5 (140)      | 7.08 (180)   | 1.5 (38)       | 6.3 (160)   | .065 (1,65)  | 25°  | TBD | TBD |
| 2"                  | DN50           | 6.25 (159)     | 7.42 (188)   | 1.5 (38)       | 6.84 (174)  | .065 (1,65)  | 19°  | TBD | TBD |

Note:  
 • Drain angle tolerances of +/- 2° will assure optimal drainability  
 • Dimensions in ( ) are mm  
 120 gauge standard

## How to Specify an EnviZion Valve

EnviZion configuration numbers follow the same format as the Pure-Flo platform, with the exception of adding the ENV prefix in front of the figure number. In addition, codes have been established for manual bonnets, actuators, and diaphragms as noted below.

| Platform                |                                    |
|-------------------------|------------------------------------|
| Code                    | Description                        |
| ENV                     | EnviZion                           |
| Body Type               |                                    |
| Code                    | Description                        |
| F                       | Forged 316L SS                     |
| W                       | Wrought 316L SS                    |
| <b>BV</b>               | <b>BioviZion 316L SS</b>           |
| EnviZion Manual Bonnets |                                    |
| Code                    | Description                        |
| ZH                      | EnviZion Zero torque Manual        |
| ZHS                     | EnviZion Zero torque Manual sealed |

| EnviZion Actuated Stainless Steel Bonnets |  |
|---|--|
| Code                                      | Description                                    |
| ZA1                                       | EnviZion Zero torque Actuator - FO             |
| ZA2                                       | EnviZion Zero torque Actuator - FC (90#)       |
| ZA3                                       | EnviZion Zero torque Actuator - DA             |
| ZA1S                                      | EnviZion Zero torque Actuator - FO sealed      |
| ZA2S                                      | EnviZion Zero torque Actuator- FC (90#) sealed |
| ZA3S                                      | EnviZion Zero torque Actuator - DA sealed      |

| EnviZion Advantage Bonnets |  |
|----------------------------|--|
| Code                       | Description  |
| ZB1                        | EnviZion Advantage Zero torque Actuator - FO             |
| ZB2                        | EnviZion Advantage Zero torque Actuator - FC (90#)       |
| ZB3                        | EnviZion Advantage Zero torque Actuator - DA             |
| ZB1S                       | EnviZion Advantage Zero torque Actuator - FO sealed      |
| ZB2S                       | EnviZion Advantage Zero torque Actuator- FC (90#) sealed |
| ZB3S                       | EnviZion Advantage Zero torque Actuator - DA sealed      |

| Diaphragms       |   |
|------------------|---|
| Code             | Description   |
| TMZ              | EnviZion modified PTFE diaphragm (FDA)/B1 backing cushion |
| Topworks Options |   |
| Code             | Description   |
| AOS              | Adjustable Opening Stop                                   |
| EBG              | EnviZion Bonnet Guard Tamper Resistant/Submersible        |

For more information on how to order an EnviZion valve, see B.ENV-ORD.2017-11.

| Valve Size |                 |
|------------|-----------------|
| Code       | Description     |
| .25        | .25 Inch (DN6)  |
| .38        | .38 Inch (DN10) |
| .50        | .50 Inch (DN15) |
| .75        | .75 Inch (DN20) |
| 1          | 1 Inch (DN25)   |
| 1.5        | 1.5 Inch (DN40) |
| 2          | 2 Inch (DN50)   |

| Body Ends |                          |
|-----------|--------------------------|
| Code      | Description              |
| Clamp     |                          |
| 419       | Tri-Clamp Tube           |
| 419S      | Tri-Clamp Tube 18 Gauge  |
| 419S1     | Tri-Clamp Tube 20 Gauge  |
| Buttweld  |                          |
| 423       | 18 Gauge                 |
| 424       | 20 Gauge                 |
| 428       | 16 Gauge                 |
| 428L      | 16 Gauge Ext. Tangent BW |

| Surface Finish               |                        |
|------------------------------|------------------------|
| Code                         | Description            |
| Mechanical Polish - Interior |                        |
| 6                            | 25 µin Ra (.6 µm) max  |
| 7                            | 15 µin Ra (.38 µm) max |
| 8                            | 20 µin Ra (.5 µm) max  |
| 10                           | 10 µin Ra (.25 µm) max |
| SF1                          | BPE SF1 Ra 20 Max      |
| SF2                          | BPE SF2 Ra 25 Max      |
| SF4                          | BPE SF4 Ra 15 Max, EP  |
| SF5                          | BPE SF5 Ra 20 Max, EP  |
| SF6                          | BPE SF6 Ra 25 Max, EP  |

| Surface Finish               |   |
|------------------------------|---|
| Code                         | Description                               |
| Mechanical Polish - Exterior |   |
| 0                            | No Mechanical Polish                      |
| 1                            | Scotch Brite                              |
| 2                            | 25 µin Ra (.6 µm) max, Welds Scotch Brite |
| 3                            | 35 µin Ra (.8 µm) max, Welds Scotch Brite |
| 4                            | 25 µin Ra (.6 µm) max, Welds Removed      |
| 6                            | 35 µin Ra (.8 µm) max, Welds Removed      |
| 7                            | Special Polish Requirement                |

| ElectroPolish |                       |
|---------------|-----------------------|
| Code          | Description           |
| 0             | No Electropolish      |
| 2             | Exterior Only         |
| 3             | Interior and Exterior |
| 4             | Interior Only         |



For more information on how to order an EnviZion valve, see B.PFORD.en-US.2018-10.

**Figure Number Example:** ENV-1-F-428L-6-0-0-TMZ-ZH  
 Description: 1" EnviZion manual valve, forged body, 16 gauge buttweld ends, 25 Ra interior polish with PTFE diaphragm with EPDM backing cushion

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Germany  
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Cam-Line, Cam-Tite, Dia-Flo,  
EnviZion, Pure-Flo, Skotch

Fabri-Valve

EnviZion, Pure-Flo

