# Baumann™ 87000 Flexsleev Sanitary Control Valve

The Baumann 87000 control valve is excellent for throttling high purity liquid or gaseous media commonly found in the food and beverage, pharmaceutical, film, and biotechnology industries.

The valve is suitable for repeated steam sterilization cycles with 2.4 bar (35 psi) maximum steam pressures.

Assembly of valve body sections using only two bolts allows for ease of cleaning and inspection. A lower telltale port is provided. The valve will drain either horizontally or vertically with the actuator in the horizontal position. In contrast to diaphragm valves, the operation is not affected by vacuum.

W9823

**Baumann 87000 Valve Shown in Recommended Mounting Position for Self-Draining**

## Features

- Unique flow pattern allows for self-draining in both vertical and horizontal pipelines
- Streamlined low shear flow contours make it ideal for sensitive biomedia
- Electropolished, wetted interior finishes to ≤ 30 $R_a$ microinch (≤ 20 $R_a$ microinch optional)
- Flow area between tubing O.D. and valve body seating is suitable for fine particulate media
- Full and reduced port orifices available to optimize sizing
- Foolproof bolting method assists with ease of valve body disassembly and reassembly
- Fisher™ FIELDVUE™ digital valve controller available for remote calibration and diagnostics in facilities utilizing the PlantWeb™ architecture


W9824

**Baumann 87000 Valve with FIELDVUE DVC2000 Digital Valve Controller**

Figure 1. Baumann 87000 Flexsleev Valve Assembly

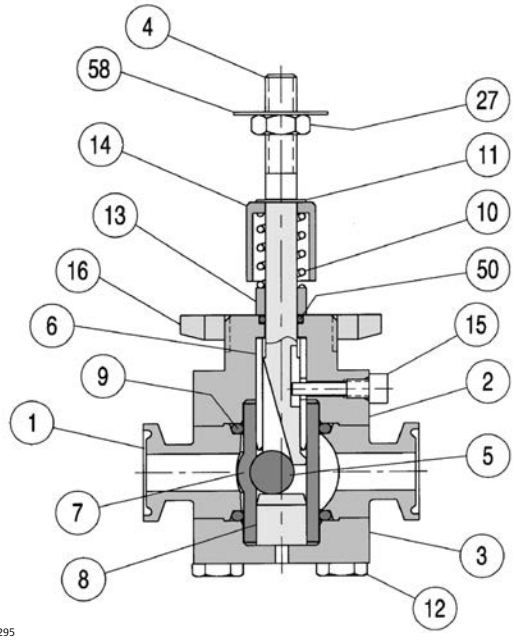



Table 1. Materials of Construction

| Key Number | Description | Material |
|---|---|---|
| 1 | Valve Body | ASTM SA479 (S31600/S31603) |
| 2 | Bonnet, Upper | ASTM SA479 (S31600/S31603) |
| 3 | Bonnet, Lower | ASTM SA479 (S31600/S31603) |
| 4 | Shaft | S21800 SST |
| 5 | Ceramic Ball | Grade 25 Ceramic |
| 6 | Sleeve Bushing | S30300 Stainless Steel |
| 7 | Sleeve | Silicone, fluorocarbon (FKM), EPDM, Perfluoroelastomer (FFKM) |
| 8 | Anvil | S21800 |
| 9 | O-Ring | Silicone, fluorocarbon (FKM), EPDM, Perfluoroelastomer (FFKM) |
| 10 | Spring Stem | Passivated Stainless Steel |
| 11 | Retaining Ring | S15700 |
| 12 | Hex Head Cap Screw | 18-8 Stainless Steel |
| 13 | Spring Seat | PA Nylon 6/6 |
| 14 | Protecting Cap | S30300 Stainless Steel |
| 15 | Alignment Pin | 18-8 Stainless Steel |
| 16 | Drive Nut, (Yoke) | S31600 SST (ASTM A194 Grade 8M) |
| 27 | Jam Nut (locknut) | B8 Stainless Steel |
| 50 | O-Ring | Fluorocarbon (FKM) |
| 58 | Travel Indicator | ASTM A240 S30400 |

# Mode of Operation

As shown in figure 2, a flexible sleeve is inserted through the length of the valve and sealed between the valve body and bonnet by O-rings. The actuator-motivated valve stem has a tapered groove that pushes a ceramic ball against the inside of the sleeve and, thereby, the sleeve against a valve seat.

Figure 2. Mode of Operation

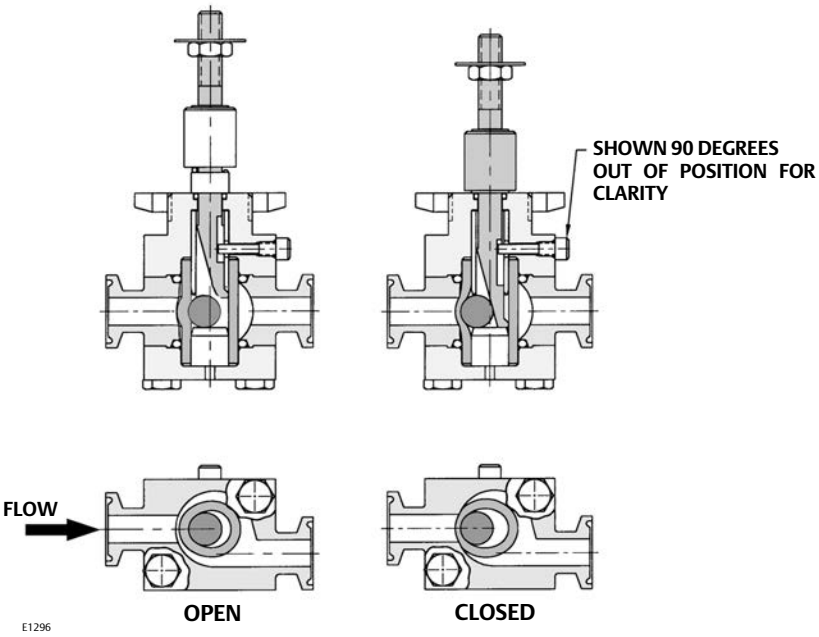



Table 2. Technical Specifications

| | |
|---|---|
| **Valve Body Rating** | 18.9 bar CWP (275 psi CWP) |
| **Nominal Size** | 17.7 mm (NPS 1/2) |
| **Connections** | 17.7 mm (0.5 inch), Tri-Clover / Tri-Clamp (Welded Ends Optional) |
| **Seat Leakage** | Class VI |
| **Bonnet** | Bolted |
| **Characteristic** | Modified Linear |
| **Internal Valve Body Finish (Wetted Interior)** | < 30 Ra Microinch / 0.76 Ra Micron (standard)<br>< 20 Ra Microinch / 0.51 Ra Micron (optional - or as required) |
| **Maximum Operating Temperature** | Refer to table 3 |
| **Available Certificates**(1) | USP CL VI, 21CFR 177(1) |

1. Consult your Emerson sales office or Local Business Partner for applicable materials.

## Table 3. Sleeve Material Temperature Chart

| SLEEVE MATERIAL[1] | TEMPERATURE RANGE[3] | SEAT LEAKAGE | FLOW DIRECTION | MAXIMUM SHUTOFF PRESSURE | |
|---|---|---|---|---|---|
| | | | | psi | bar |
| Silicone | -62 to 232°C (-80 to 450°F) | VI | To Open | 150 | 10.35 |
| Silicone (steam) | -17 to 135°C (0 to 275°F) | | | | |
| Fluorocarbon (general service) | -17 to 204°C (-0 to 400°F) | | | | |
| Fluorocarbon (water or steam service) | -17 to 37°C (-0 to 100°F) | | | | |
| EPDM | -40 to 148°C (-40 to 300°F) | | | | |
| Perfluoroelastomer[2] | -17 to 248°C (-0 to 480°F) | | | | |

1. Medical grade in compliance with FDA 21CFR 177.
2. Please consult your Emerson sales office or Local Business Partner before ordering perfluoroelastomer.
3. Sleeve material temperature limitations may reduce allowable shutoff pressures.

## Table 4. Flow Coefficients (ASME/ISA/IEC) and ISA Sizing Factors[1]

| PLUG TRAVEL mm (INCH) | ORIFICE DIAMETER mm (INCH) | $C_V$ AT VALVE OPENING - PERCENT OF PLUG TRAVEL |
|---|---|---|
| | | 100 |
| 7.9 (0.3125) | 3.18 (0.125) | 0.25 |
| | 9.40 (0.370) | 1.25 |

1. See Fisher Catalog 12 for a full range of flow and sizing information.

## Table 5. Model Numbering System

| 87 | | | | | | | |
|---|---|---|---|---|---|---|---|
| 87000 | MAX $C_V$ | | | END CONNECTIONS | | SLEEVE MATERIAL | |
| | | $C_V$ | $K_V$ | | | | |
| | 00 | 0.25 | 0.22 | 1 | Tri-Clamp | S | Silicone |
| | 01 | 1.25 | 1.08 | 3 | Special | E | EPDM |
| | | | | | | V | Fluorocarbon |
| | | | | | | K | Perfluoroelastomer[1] |

1. Consult your Emerson sales office or Local Business Partner.

Figure 3. 87000 Dimensions

**87000 WITH BAUMANN 16 ACTUATOR AND FIELDVUE DVC2000 SHOWN IN RECOMMENDED MOUNTING POSITION FOR SELF-DRAINING (TOP VIEW SHOWN AT RIGHT)**

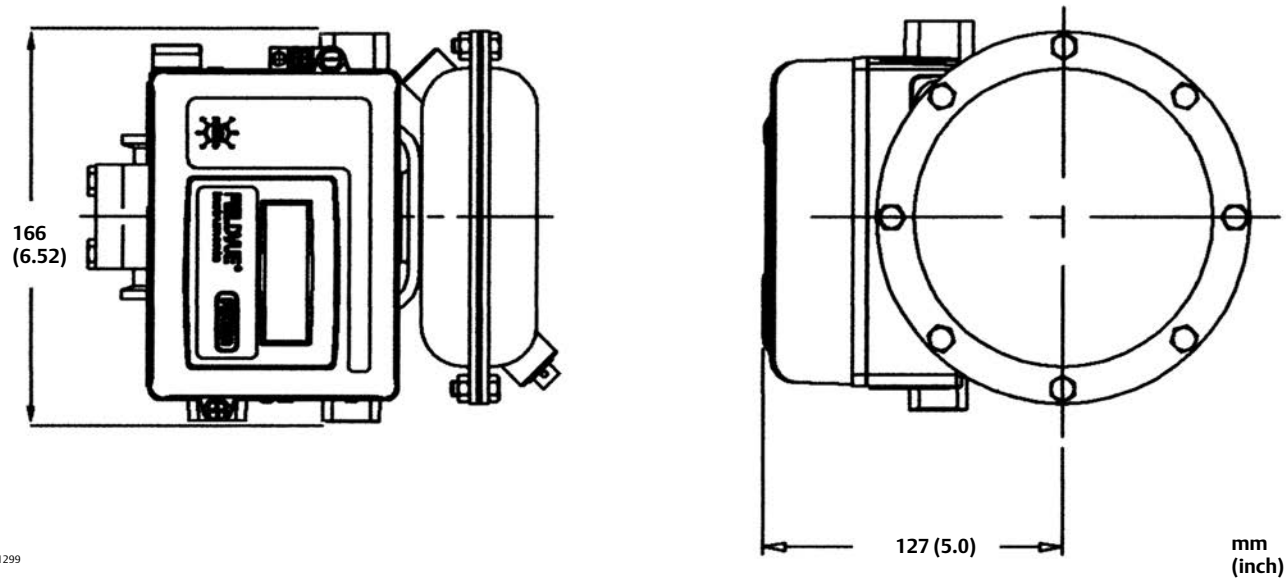
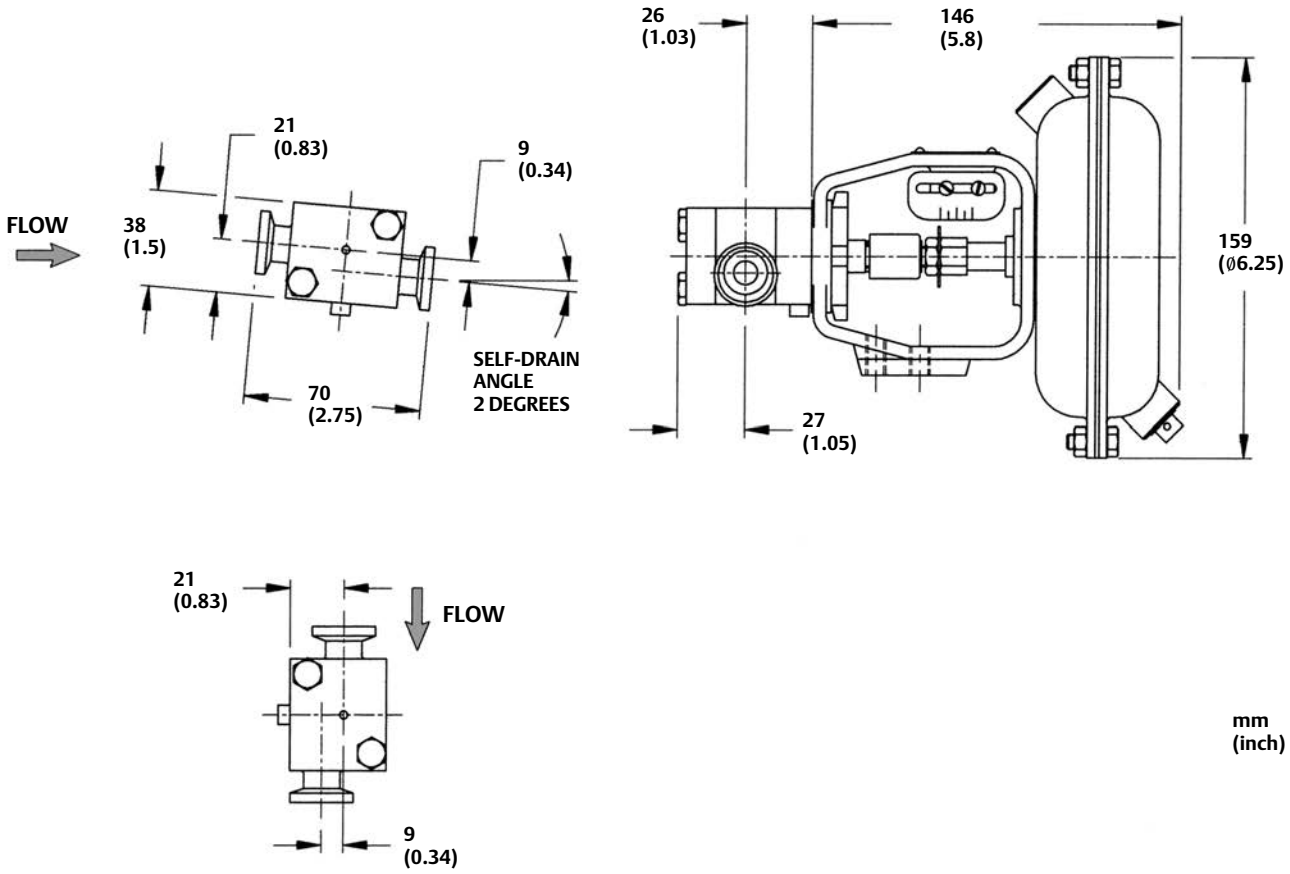


Figure 4. 87000 Dimensions

**87000 WITH BAUMANN 16 ACTUATOR SHOWN IN RECOMMENDED MOUNTING POSITION FOR SELF-DRAINING**




**RECOMMENDED MOUNTING FOR SELF-DRAINING (ACTUATOR SHOULD BE MOUNTED HORIZONTALLY)**

E1297

NOTE: ACTUATOR REQUIRES 115mm (4.5 INCHES) VERTICAL CLEARANCE.

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