

## Spring-Loaded, Back-Pressure Regulators—TBVS8 Series

### Features

- Spring-loaded pressure control
- Diaphragm sensing mechanism
- Diaphragm support plates allow for use in vacuum
- 316L stainless steel materials of construction
- Adjustable from 0.07 psig (2.0 in. H<sub>2</sub>O, 5 mbar) pressure

- Compliance with FDA/USP class VI

### Options

- Factory set and locked
- Wetted components finished to 15.7 μin. (0.4 μm) or 31.5 μin. (0.8 μm)
- Special cleaning to ASTM G93 Level C

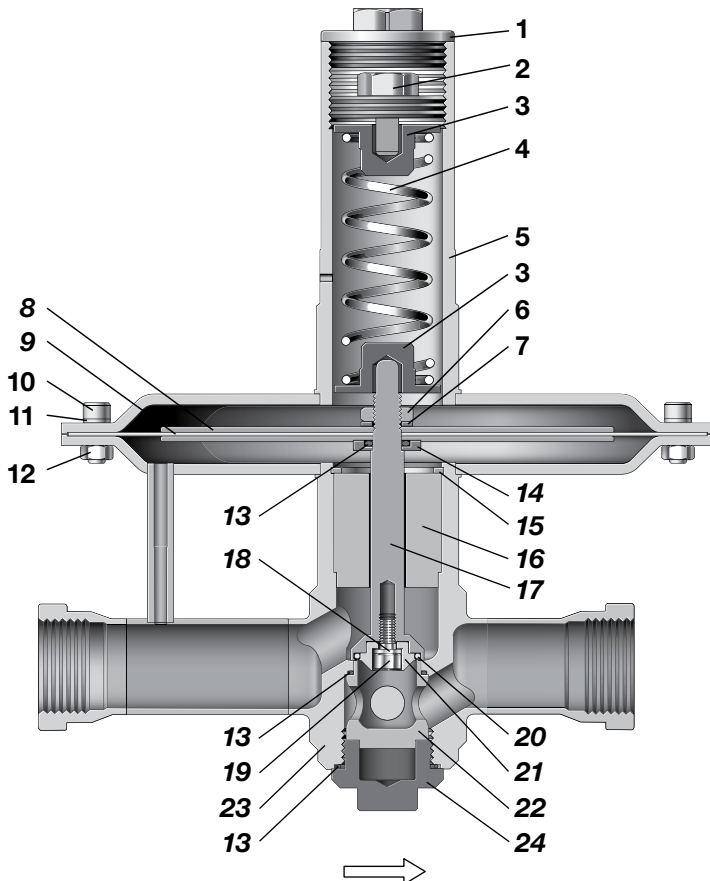


### Technical Data

Series	Maximum Inlet Pressure psig (bar)	Maximum Inlet Control Pressure psig (in. H <sub>2</sub> O, mbar)	Sensing Type	Temperature Range °F (°C)	Flow Coefficient (C <sub>v</sub> )	Seat Diameter in. (mm)	Inlet and Outlet Connections	Weight lb (kg)
TBVS8	87.0 (6.0)	7.2 (200, 500)	Diaphragm	-4 to 212 (-20 to 100)	8.35	0.83 (21.0)	1 in. NPT, ISO/BSP parallel thread, sanitary clamp (BSOD), ASME or DIN flange	Threaded 14.3 (6.5) Flanged 18.7 (8.5)

### Materials of Construction

TBVS8 Series Regulator



Component	Material / Specification
1 Cover	316L SS / A479 or EN10088
2 Adjusting screw	
3 Spring guide	
4 Set spring	
5 Spring housing assembly	316L SS / A479 or EN10088
6 Nut	A2
7 Lock washer	A4
8 Diaphragm plate	316L SS/ A479 or EN10088
9 Diaphragm / support	PTFE / fluorocarbon FKM
10 Socket-head cap screw	A4-80
11 Lock washer	A2
12 Nut	
13 O-ring	PTFE
14 Seal housing	316L SS/ A479 or EN10088
15 Retaining ring	
16 Guide ring	PTFE
17 Stem	316L SS/ A479 or EN10088
18 Washer	A4
19 Socket-head screw	
20 Seat seal	FKM, EDPM, Kalrez 6230
21 Valve ring	316L SS/ A479 or EN10088
22 Valve seat	
23 Body assembly (body, outlet tube, EF tube, fittings, lower dish)	
24 Body plug	

Wetted lubricants: *Silicone-based and synthetic hydrocarbon-based*

Wetted components listed in *italics*.

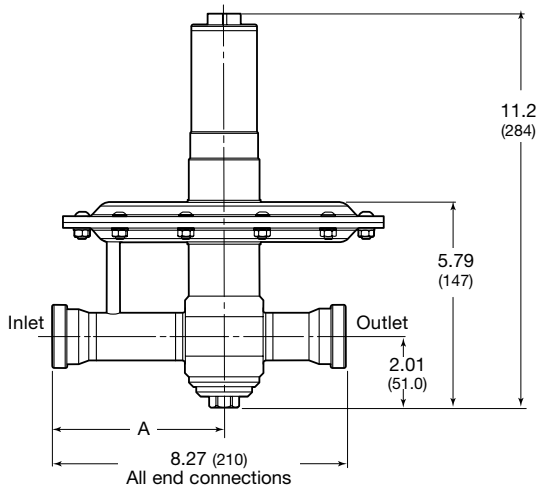
### Dimensions

Dimensions, in inches (millimeters), are for reference only and are subject to change.

End Connection Size and Type	A in. (mm)
1 in. female ISO/BSP parallel thread	4.84 (123)
1 in. female NPT	4.84 (123)
DN25 PN16 flange	4.61 (117)
1 in. ASME class 150 flange	4.61 (117)
1 in. sanitary clamp (BSOD)	4.84 (123)

### Flow Table

Set Pressure	Inlet Pressure, psig (in. H <sub>2</sub> O, mbar)					
	0.14 (4.0, 10)	0.29 (8.0, 20)	0.58 (16, 40)	1.4 (40, 100)	2.9 (80, 200)	7.2 (200, 500)
	Air Flow, std ft <sup>3</sup> /min (Nm <sup>3</sup> /h)					
25 % overpressure	3.2 (5.5)	7.0 (12.0)	11.1 (19.0)	19.4 (33.0)	31.7 (54.0)	64.7 (110)
50 % overpressure	4.4 (7.5)	8.8 (15.0)	15.8 (27.0)	24.7 (42.0)	40.0 (68.0)	76.5 (130)
75 % overpressure	5.0 (8.5)	10.2 (17.5)	18.4 (31.4)	29.4 (50.0)	49.4 (84.0)	82.3 (140)
100 % overpressure	6.4 (11.0)	11.1 (19.0)	21.7 (37.0)	31.7 (54.0)	54.7 (93.0)	88.2 (150)



Shown with female ISO/BSP parallel thread end connections

### Ordering Information

Build a TBVS8 series regulator ordering number by combining the designators in the sequence shown below.

**1 2 3 4 5 6 7 8 9 10 11**  
**TBVS FA 8 A 1 - 02 - 3 - T T V - FS**

**1 Series**

TBVS = 87.0 psig (6.0 bar) maximum inlet pressure

**2 Inlet /Outlet**

**B** = Female ISO/BSP parallel thread  
**N** = Female NPT  
**FA** = ASME B16.5 flange  
**FD** = DIN flange  
**TC** = Sanitary clamp (BSOD)

**3 Size**

8 = 1 in. / DN25

**4 Pressure Class**

Omit designator if flanges are not ordered.  
**A** = ASME class 150  
**M** = DN class PN16

**5 Flange Facing**

Omit designator if flanges are not ordered.  
 1 = Raised face smooth

**6 Body Material**

02 = 316L SS

**7 Pressure Control Range**

**1** = 0.07 to 0.14 psig (2.0 to 4.0 in. H<sub>2</sub>O, 5 to 10 mbar)  
**2** = 0.14 to 0.72 psig (4.0 to 20 in. H<sub>2</sub>O, 10 to 50 mbar)  
**3** = 0.29 to 2.9 psig (8.0 to 80 in. H<sub>2</sub>O, 20 to 200 mbar)  
**4** = 0.72 to 7.2 psig (20 to 200 in. H<sub>2</sub>O, 50 to 500 mbar)

**8 Seal Material**

T = PTFE

**9 Diaphragm Material**

T = PTFE

**10 Seat Seal Material**

**V** = Fluorocarbon FKM  
**E** = EPDM  
**F** = Kalrez 6230

**11 Options**

**FS** = Factory set and locked  
**P4** = Wetted components finished to 15.7 μin. (0.4 μm)  
**P8** = Wetted components finished to 31.5 μin. (0.8 μm)  
**G93** = ASTM G93 Level C-cleaned