

Model BP20-TC

In-Line Sanitary Tri-Clamp Flange Back Pressure/Bypass Valve



-In-Line, Self-Draining Design

-Diaphragm Operated

-1"-2" Sanitary Tri-Clamp Connections

-Inlet Pressures Up To 150 PSIG (10.3 BAR), Set Pressure Range From 0-20 PSIG (0-1.38 BAR)

-In Line Serviceable

-Internal 20 RA Surface Finish Standard Constructed of 316L Stainless Steel

Features

- **Pressure-Containing Parts:** Manufactured to maximize operational sensitivity for low-pressure applications.
- **Body and Trim:** Standard material is type 316L stainless steel mechanically polished to a uniform 20 RA surface finish. Electropolishing for enhanced surface finish is offered at an additional cost.
- **Diaphragm Mechanism:** Offered in 1"-2" sizes. Diaphragm-sensed back pressure valves react to system inlet pressure, delivering excellent control in low-pressure systems (0–20 psig).
- **Teflon-Viton Composite Reinforced Diaphragm:** Viton backed diaphragm with a Teflon film interacting on the wetted side offers adequate corrosion resistance to a variety of fluids and gases including steam with an allowable temperature of 350°F (176°C). Diaphragms with Buna backing are available for lower temperature applications. Flexible all Buna or all Viton diaphragms are available as well and are recommended for low pressure applications.
- **Spring Chamber and Adjusting Spring:** These parts are non-wetted, not in contact with the fluid or gas, and standard in 316L stainless steel.
- **90° Porting:** Sanitary Tri-Clamp connections are standard. The valve can be mounted in any orientation.
- **Inline Serviceable:** Capable of being serviced inline. The process lines must be depressurized before any servicing of this product. All trim components can be replaced, inspected, or cleaned by removing the sanitary clamp.
- **300 Series Stainless Steel V-Band Clamp:** Allows for quick assembly and disassembly. Clamp is rated for 800 psi.

Applications

The Sanitary Tri-Clamp Back Pressure Valve is a precise solution for backpressure regulation in low-pressure systems (0–20 psig). It is purpose-built to maintain constant pump discharge pressures, bypass excessive system pressure, and protect your clean lines. This valve handles filtered or strained liquids and gases, including water, steam, non-fluorinated chemicals, and inert gases. While traditional metal seats leak at low pressures, our engineered soft-seat design delivers a tight, zero-leak shut-off. For a high-performance, accurate upgrade to your sanitary process or piping system, this low-pressure specialist is an excellent choice.

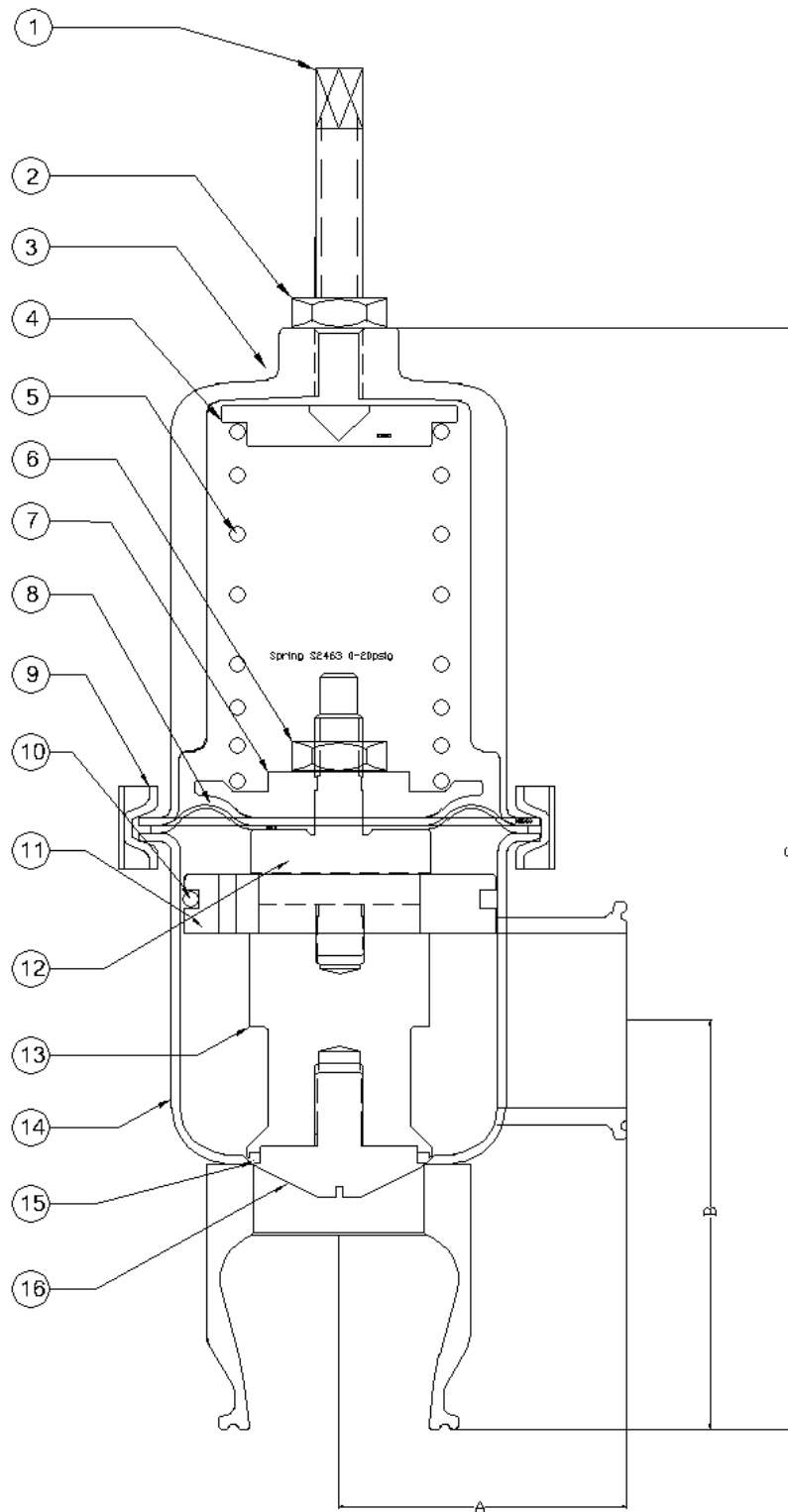
Options

- **Connection Sizes:** 1", 1-½", 2" tri-clamp sanitary ferrules typical.
- **Diaphragm Sensing:** (1", 1-½", 2" Only)
- **Seat:** PTFE, Buna, Viton, EPDM
- **Body and Spring Chamber Seal:** EPDM, Buna, Viton,
- **Piston Seal:** EPDM, Buna, Viton,
- **Seat:** EPDM, Buna, PTFE, Viton,
- **Surface Finish:** 20 RA mechanical polish, Electropolished
- Viton Backing with PTFE Film (wetted side), Buna Backing with PTFE Film (wetted side), Only Buna, Viton, or EPDM

***Price Varies with Materials of Construction, Size, and Selected Options/Alternatives**

Principle of Operation

This direct-acting valve uses an adjustable spring and flexible diaphragm that reacts immediately to system inlet pressure, delivering reliable accuracy. To dial in your exact process limits, simply turn the adjusting screw clockwise to raise the pressure setpoint or counterclockwise to lower it. The key advantage of this design is its sensitive 0–20 psig low-pressure control and resilient soft seat. It seals bubble tight as pressure drops, ensuring consistent regulation. This responsive opening action permits flow to the outlet, safely bypassing excess pressure while protecting your low-pressure process from disruptions and maintaining total system control.



MATERIAL LIST & SPECIFICATION

PART	MATERIAL
1 ADJUSTING SCREW	304, 316L STAINLESS STEEL
2 JAM NUT	304, 316L STAINLESS STEEL
3 SPRING CHAMBER	303, 316L STAINLESS STEEL
4 SPRING PUSHER	303, 316L STAINLESS STEEL
5 SPRING	304, 316L STAINLESS STEEL
6 NUT	304, 316L STAINLESS STEEL
7 SPRING FOLLOWER	304, 316L STAINLESS STEEL
8 DIAPHRAGM	PTFE/VITON, PTFE/BUNA, BUNA/VITON
9 V-BAND CLAMP	304 STAINLESS STEEL
10 GUIDE SEAL	PTFE
11 GUIDE	303, 316L STAINLESS STEEL
12 UPPER POPPET	303, 316L STAINLESS STEEL
13 LOWER POPPET	303, 316L STAINLESS STEEL
14 BODY	316L STAINLESS STEEL
15 SEAT SEAL	PTFE, BUNA, VITON, EPDM
16 SEAT HOLDER	303, 316L STAINLESS STEEL

DIMENSIONS (Inches)

SIZE	CV	A	B	C
1"	9.1	3"	2-3/8"	9-3/16"
1-1/2"	23.2	3"	3-1/2"	10-1/2"
2"	44.6	3"	4-3/8"	11-11/16"

PH 973-340-9955
FX 973-340-9933
20 BUSHES LANE
ELMWOOD PARK, NJ 07407

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STRAINERS VAL

DATE	TITLE	REV
05/15/2006	Back Pressure/Bypass Valve IN LINE SE-017A BY TIE/J-UP	A
DRWN	BVG MD	
AS	BP20-TC	

Material List and Specification

Diaphragm Sensed

#	Part	Materials
1.	Adjusting Screw	304, 316L Stainless Steel
2.	Jam Nut	304, 316L Stainless Steel
3.	Spring Chamber	303, 316L Stainless Steel
4.	Spring Pusher	303, 316L Stainless Steel
5.	Spring	304, 316L Stainless Steel
6.	Nut	304, 316L Stainless Steel
7.	Spring Follower	304, 316L Stainless Steel
8.	Diaphragm	TFE/Viton, TFE/Buna, Viton, Buna
9.	V-Band Clamp	304 Stainless Steel
10.	Guide Seal	PTFE
11.	Guide	304, 316L Stainless Steel
12.	Upper Poppet	303, 316L Stainless Steel
13.	Lower Poppet	303, 316L Stainless Steel
14.	Body	316L Stainless Steel
15.	Seat Seal	PTFE, Buna, Viton, Epdm
16.	Seat Holder	303, 316L Stainless Steel

Dimensions (inch)				
Size	CV	A	B	C
1”	9.1	3"	2-3/8”	9-3/16”
1-1/2”	23.2	3"	3-1/2”	10-1/2”
2”	44.6	3"	4-3/8"	11-11/16”

Note: Dimensions are approximate and are subject to change without notice. Request certified dimensions before final product installation.

1" BP20-10TC

Sanitary Tri-Clamp Connections 150 psi (~10 bar) rating

Multiple Spring Ranges from:0-20 psig (0-1.38 barg) Select spring from pricing page

1 1/2" BP20-15TC

Sanitary Tri-Clamp Connections 150 psi (~10 bar) rating

Multiple Spring Ranges from:0-20 psig (0-1.38 barg) Select spring from pricing page

2" BP20-20TC

Sanitary Tri-Clamp Connections 150 psi (~10 bar) rating

Multiple Spring Ranges from:0-20 psig (0-1.38 barg) Select spring from pricing page

The spring ranges listed above are not achievable with one spring, but are compressed to show overall product capability. Select a specific spring range in the pricing pages or specify a set pressure when ordering.