



MODEL BA1



MODEL BL1

### APPLICATIONS

Used in pharmaceutical industry in production of many health care products for both human and animal consumption. Widely applied for processed food production — candy, beverages, nutritional supplements and artificial sweeteners. May also be used in cosmetics production and specialty chemicals.

Would be found supporting fermenters, batching tanks, cookers, autoclaves, dryers and other similar equipment.

## MODELS BA1/BL1 BIO-SANITARY BACK PRESSURE REGULATORS

The Models BA1 and BL1 are stainless steel back pressure relief regulators designed to handle small to mid-capacity flow rates in sanitary biotechnical process piping systems. These units are capable of controlling inlet pressure to a level between 2 and 135 psig (.13 and 9.3 Barg).

### MODELS BA1 and BL1 FEATURES

- Adjustment Ease:** Adjusting knob for frequent set point changes.
- Wetted Materials Construction:** All metallic parts are 316L SST. Unit is cleaned to Cashco Spec. #S-1576.
- Surface Finish:** Interior of body mechanically polished per ASME BPE 2012 (SFV-4 10 micro-inch  $R_a$  finish). Interior and exterior surfaces are electro-polished.
- Top Guided:** A “non-wetted” guide in the topworks above the diaphragm provides stability at all set points.

### MODEL BA1 FEATURES

- Self-Draining:** Self-draining angle style body with side inlet and bottom outlet.

## STANDARD/GENERAL SPECIFICATIONS

**Body Size:** 1/2", 3/4" (DN15, 20.)

**Body & Spring Chamber Materials:** Wrought Barstock; ASTM A479, Type 316L SST.

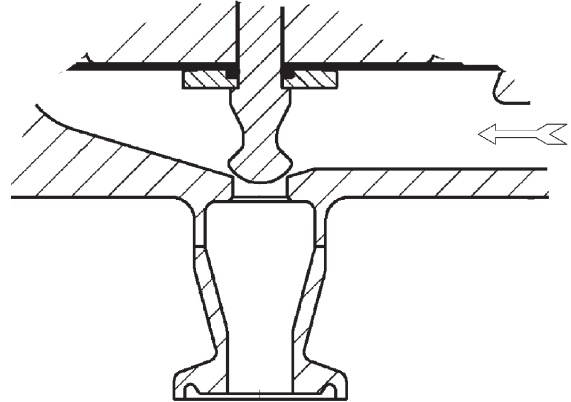
**Body Connection:** Standard - Sanitary "Tri-Clamp®". Designed to seal against weld-type clamp liners per ISO 2852.  
Alternate - Tube end connections 1/2" size for BL1 design only.

**Cleaning:** All units cleaned per Cashco Spec. #S-1576.

**Trim:**

PART	LE
Diaphragm *	EPDM
Piston	316L SST
Seat <sup>1</sup> *	316L SST
Plug	316L SST
Pusher Plate	316L SST
Body Cap **	316L SST
Temperature Range °F (°C)	-20 to +275 (-29 to +135)

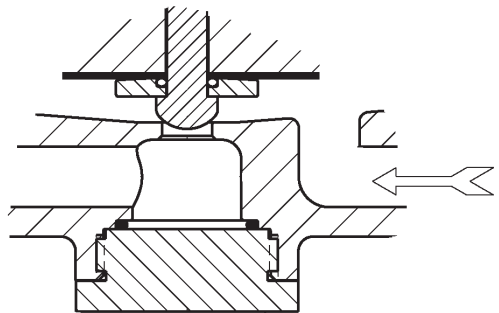
\* Parts conforms with FDA Code of Federal Regulations Title 21, Part 177  
\*\* Not required on PA1  
<sup>1</sup> The fixed portion of the seat is integral to the body. Indicated seat is the moving portion and is attached or integral with the plug.



**Figure 1**  
Metal Seat  
Shown with  
Angle Design

**Seals:** TFE o-ring at pusher plate and body cap locations. All seals meet USP Class VI requirements.

**Operating Temperature:** -20 to +275°F (-29° to +135°C)



**Figure 2**  
Metal Seat  
Shown with  
In-Line Design

**Inlet Pressure:** 135 psig (9.3 Barg) maximum

**Operating Pressure / Range Springs:** Standard: SST

Range Spring	
psig	(Barg)
2-25	(.34-1.7)
20-50	(1.4-3.4)
40-100	(2.7-6.9)
80-135	(5.5-9.3)

**Opt-1:** **CLOSING CAP.** A removable cap discourages tampering with spring setting. Covers the adjusting screw threads to enhance cleanability.

**Opt-33:** **THIRD BODY CONNECTION.** BA1 design only. Two side inlets, bottom outlet.

**Cv's/Capacities:** BL1 - Inline Wide Open Cv: 1.22  
BA1 - Angle Wide Open Cv: 1.86  
See Tables 1a-1d, 2a, 2b for flow curves

**Opt-41:** **EXTENDED TUBE END CONN.** Body sizes 1/2" (DN15), BL1 design only. SST extension tube diameter with 0.065 inch (1.65 mm) wall thickness.

TABLE 1a

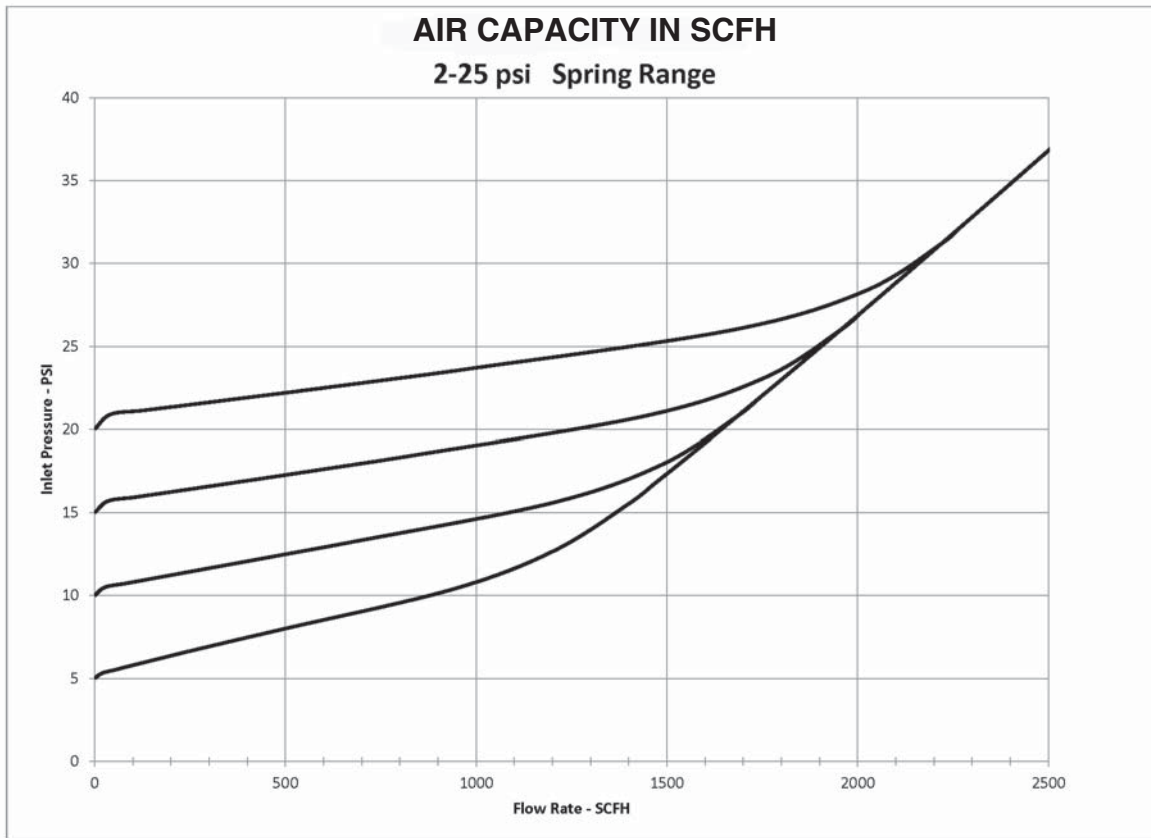


TABLE 1b

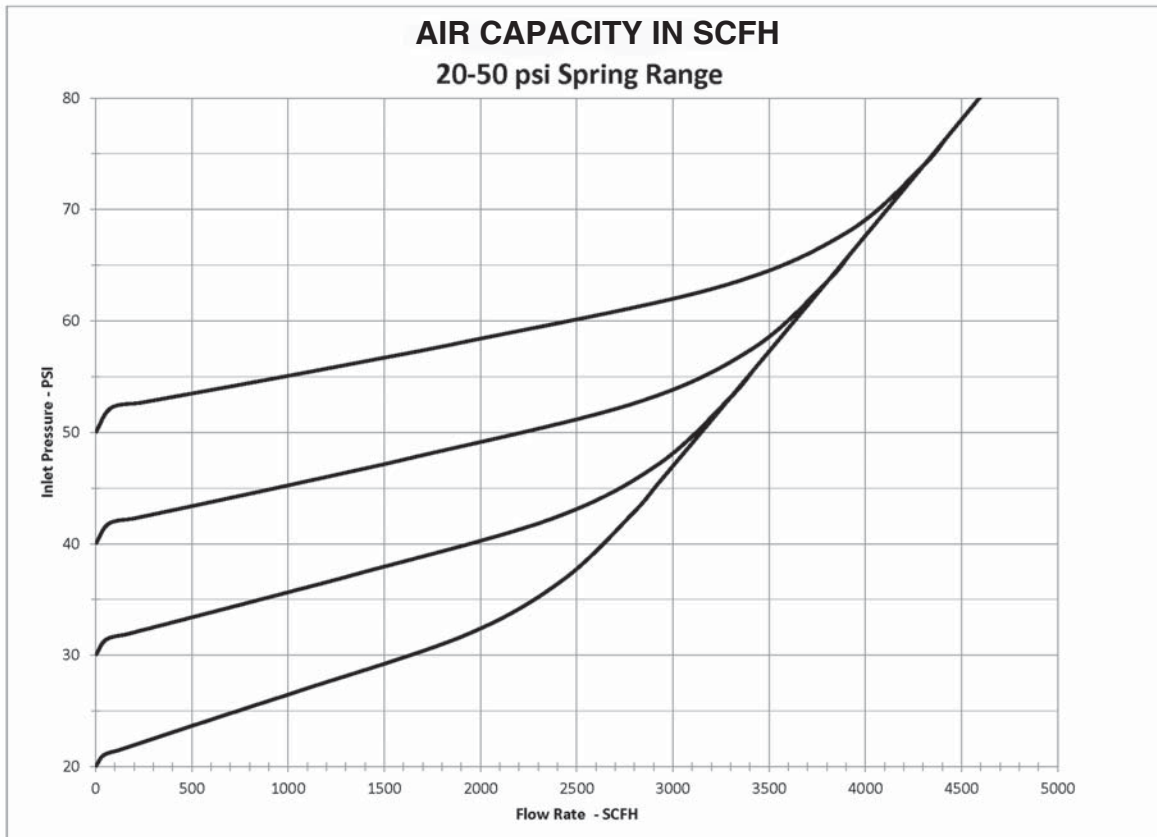


TABLE 1c

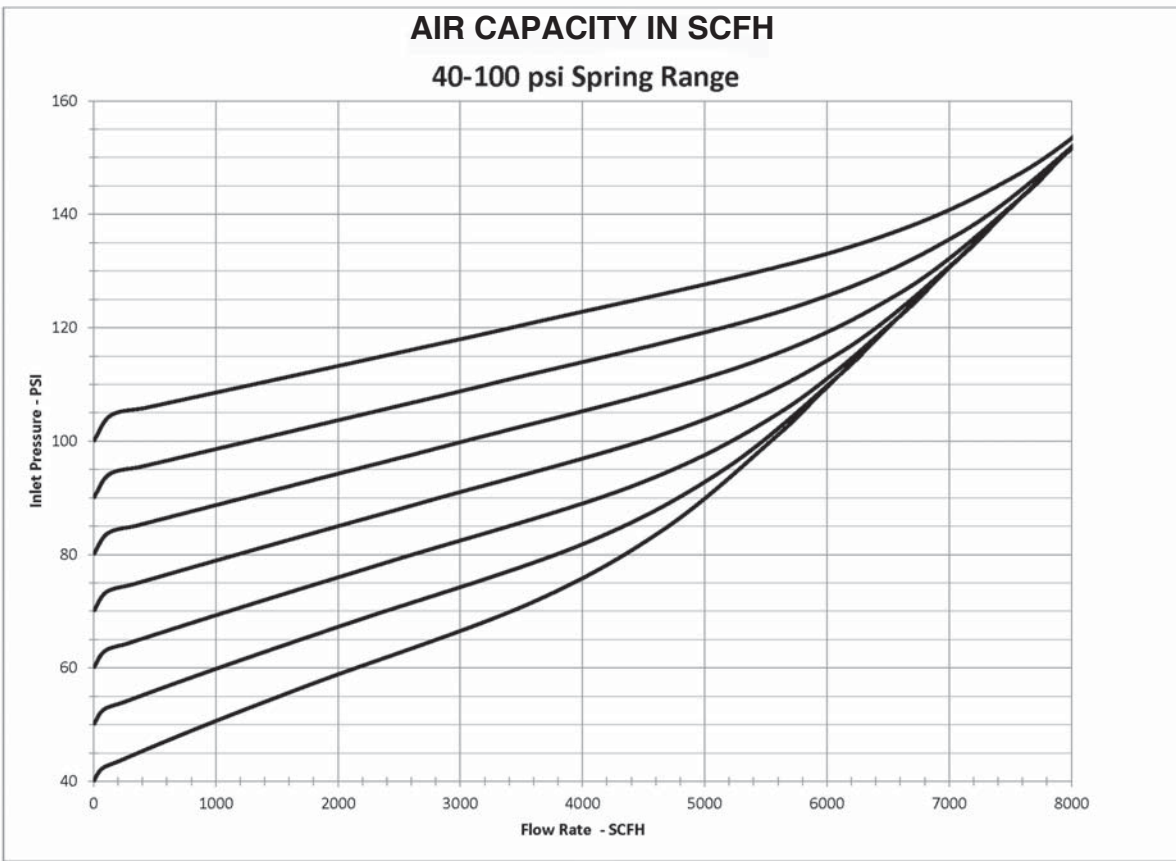


TABLE 1d

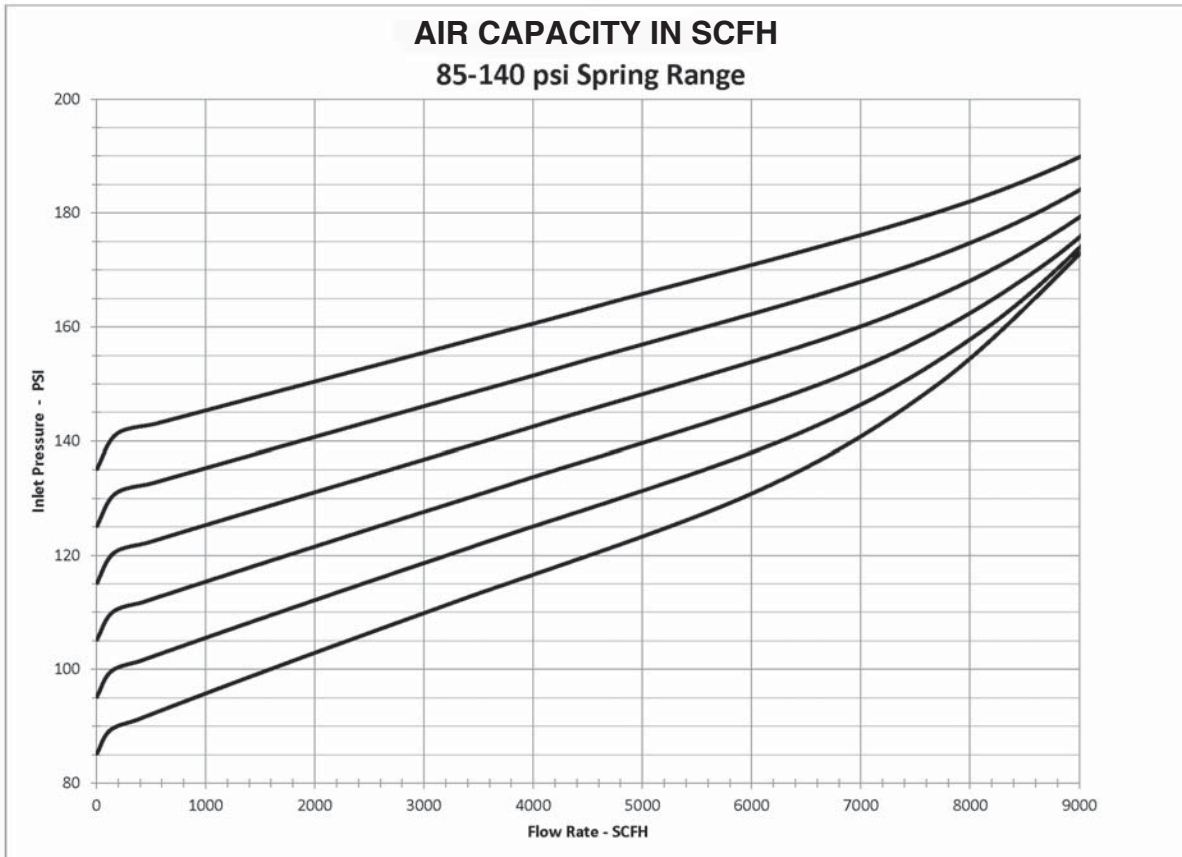


TABLE 2a

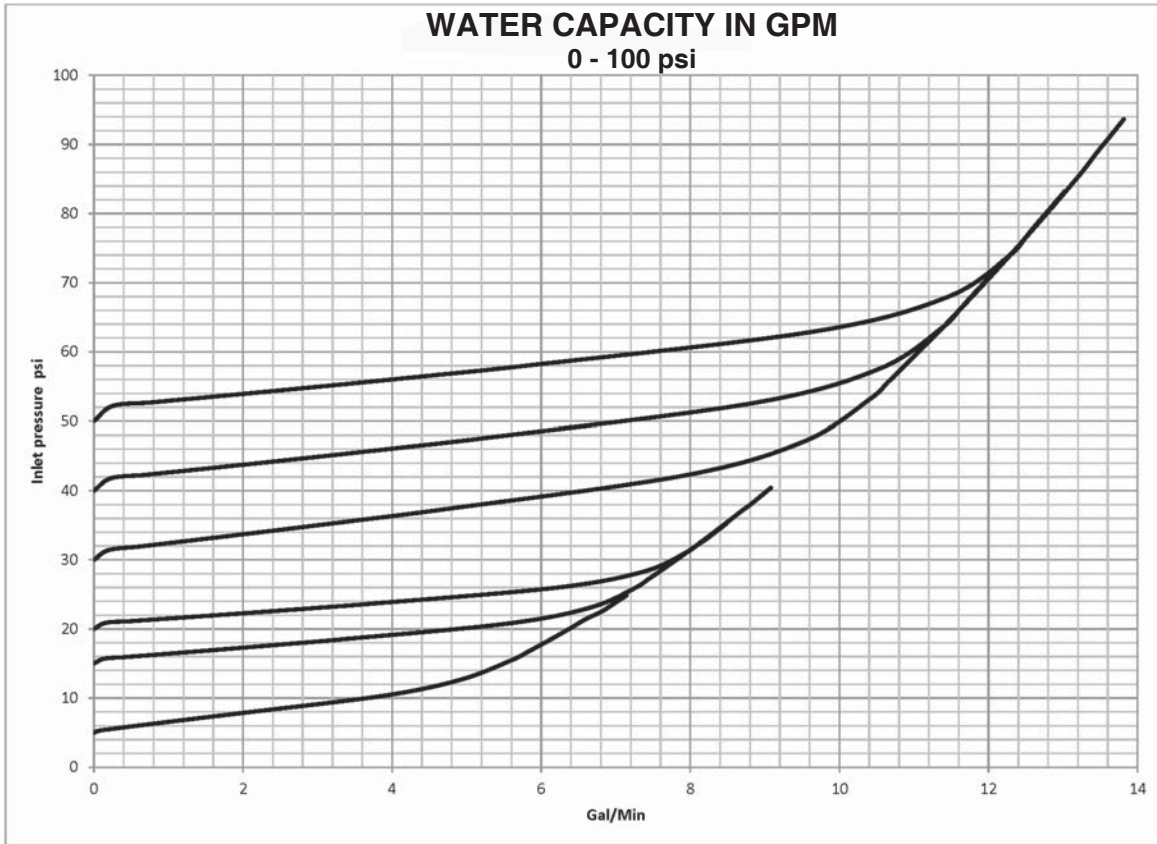
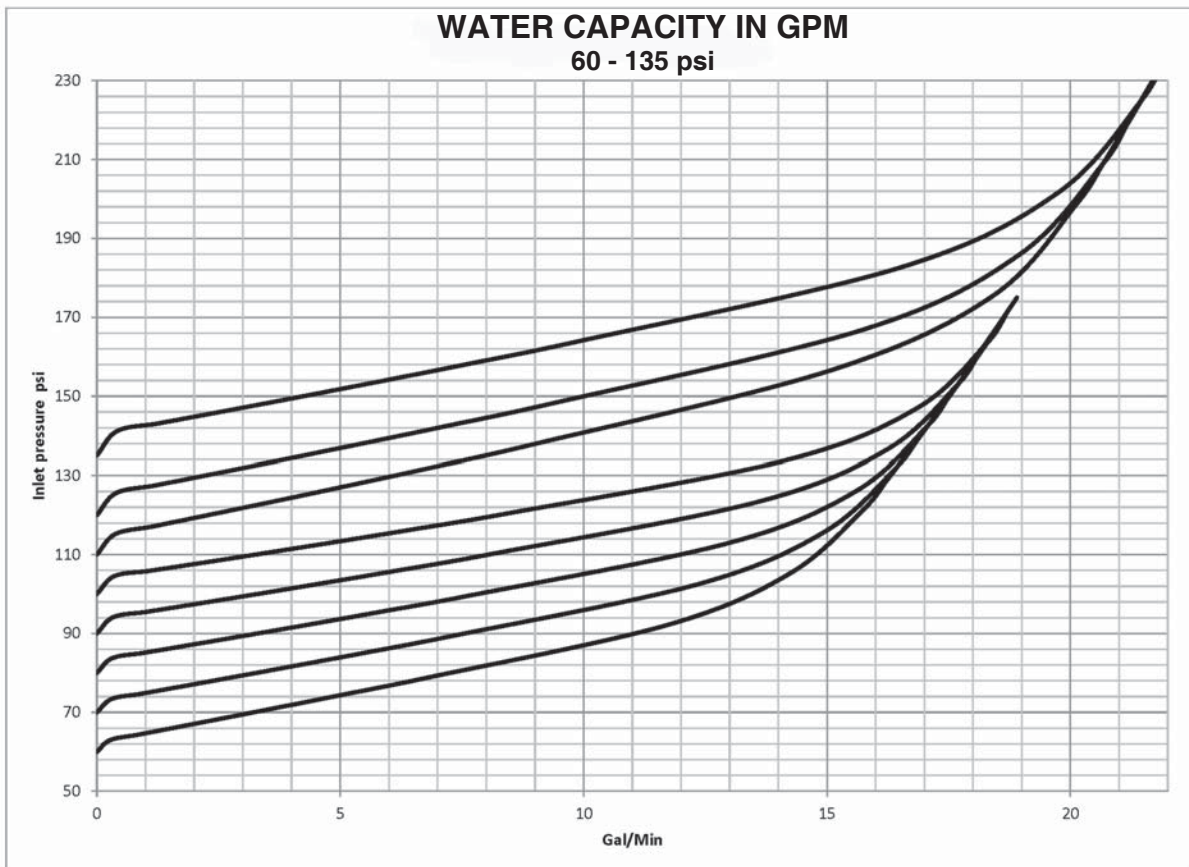
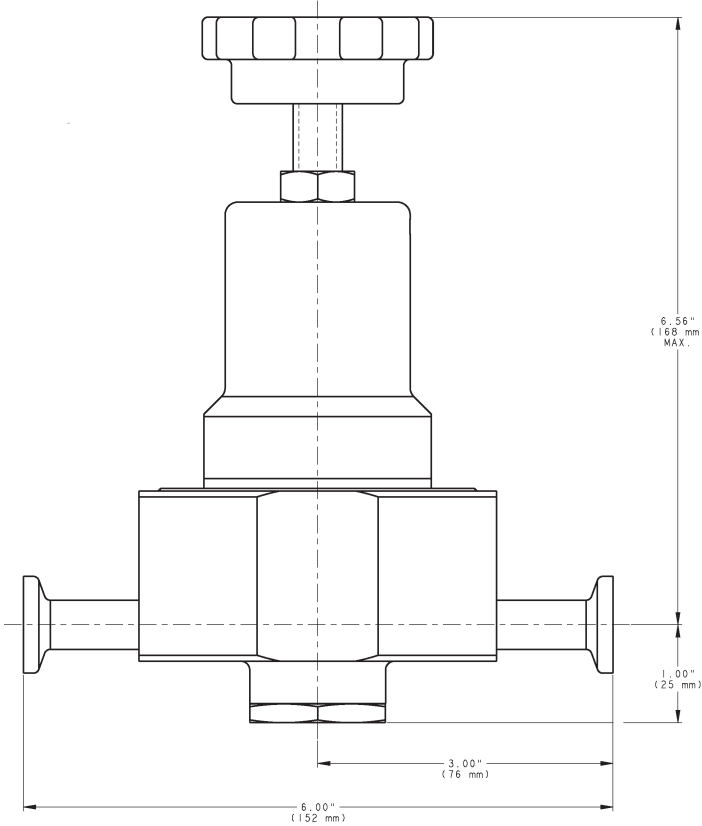


TABLE 2b



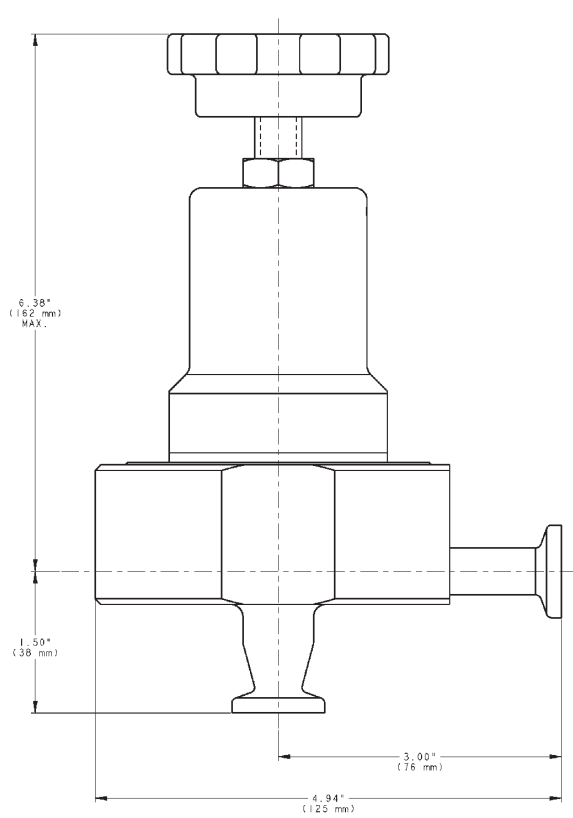
## DIMENSIONS AND WEIGHTS

MODEL BL1

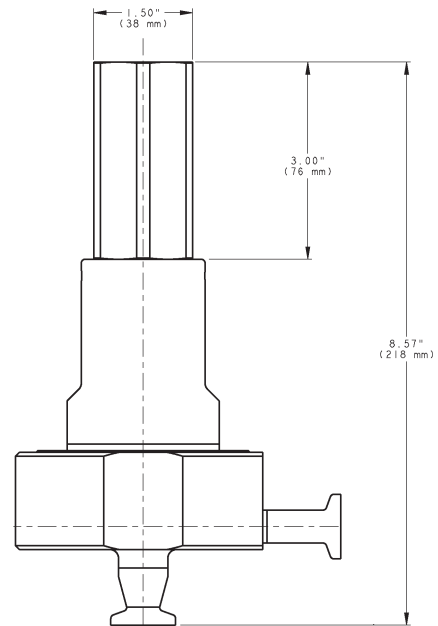
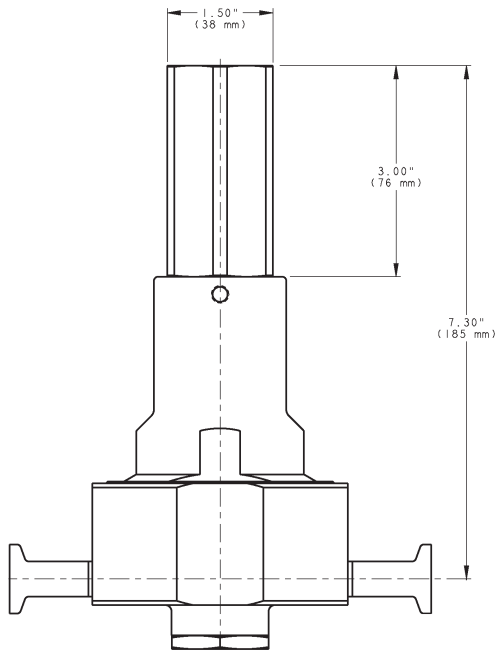


Weight = 7 Lbs. (3.18 kgs)

MODEL BA1



Weight = 6 Lbs. (2.72 kgs)



Opt-1 CLOSING CAP

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# MODELS BA1/BL1 PRODUCT CODER 02/10/16

FOR THE BIO / SANITARY INDUSTRY



POSITION 3 - SIZE				
Size		Model	Connection Orientation	CODE
in	(DN)			
1/2"	(15)	BL1	In-Line — side inlet / side outlet	4
		BA1	Angle — side inlet / bottom outlet *	5
3/4"	(20)	BL1	In-Line — side inlet / side outlet	6
		BA1	Angle — side inlet / bottom outlet	7

\* Bottom Outlet is bored to 3/4" size.

POSITION 6 & 7 – TRIM DESIGNATION NUMBERS	
Desig.	CODE
LE	LE

Comply w/ FDA 21 CFR 177. & USP Class VI material classification.

POSITION 8 - Product Classification Under European "Pressure Equipment Directive"		
PRODUCT DESTINATION	HAZARD CATEGORY	CODE
Anywhere except Europe	N/A	7
European Countries *	Sound Engineering Practice (SEP)	S

\* For products to be placed in service in Europe - Ref to Directive 97/23/EC. Forward Completed "EU" Application Recorder prior to quotation. (Without Recorder- Processing of Purchase Order will be delayed). Contact Cashco for Assistance.

POSITION 10 - END CONNECTIONS		
Description	Option	CODE
Sanitary Tri-Clamp End Connections	-	1
Third Body Conn. Sanitary Tri-Clamp (2 side inlets (flow thru), 1 bottom outlet)	-33	4
Tube End Connections - 1/2" size BL1 only	-41	T

POSITION 11 – RANGE SPRINGS		
SST Range Spring		CODE
psig	(Barg)	
2-25	(.13-1.7)	1
20-50	(1.4-3.4)	2
40-100	(2.7-6.9)	3
80-135	(5.5-9.3)	4

POSITION 13 - OPTIONS		
Description	Option	CODE
None	-	0
Closing Cap	-1	1

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