

FB5C Series

3A Sanitary Back Pressure Regulators

The FB5C is available with a hard seat and a variety of diaphragm and o-ring materials, making the valve well-suited for virtually any sterile back pressure application.

The FB5C operates by sensing the inlet pressure, or back pressure, beneath the diaphragm, as flow enters from inlet port on the side. As the back pressure exceeds the setpoint, the diaphragm force compresses the range spring permitting the stem to move from the seat toward the open position. As the flow increases, the back pressure is relieved and the spring and diaphragm relax, allowing the stem to return to the normally closed position. If a different set point is desired, a simple turn of the adjusting screw will increase or decrease the setting to any set point within the range covered by the regulator's spring.

FEATURES

- No guiding surfaces in the fluid – prevents particulate generation
- 100% 316L body and trim
- Self-draining
- No threads to disassemble for cleaning
- Clean-in-Place, Steam-in-Place – dome features spring arrangement to allow CIP/SIP

DOCUMENTATION

The following documentation is kept in an electronic data base and is available upon request as a chargeable option.

- Certificate of Compliance for:
 - Material, including MTR's
 - Surface Finish
 - FDA
 - 3A



AVAILABLE FINISHES

Body

- Standard: 32 Ra mechanical finish on all wetted surfaces; as cast finish on exterior.

Spring Housing

- Standard: as cast finished 316SST

Adjusting Screw and Handle

- Standard: 32Ra (Note: adjusting screw is a threaded part)



SPECIFICATIONS – O-RING DIAPHRAGM

Sizes: 3/4", 1", 1-1/2" 2", 3"

End Connections: Sanitary Clamp

Trim Materials: 316L Stainless Steel (ASTM A479, S31603)

Body Materials: ASTM A351, CF3M 316L

Seat Materials

- Standard hard seat – integral 316L SST seat

Spring Housing Materials

- CF8M cast SST (3/4" – 3")

Diaphragm Materials

- EPDM/Nylon (to 275°F, 135°C), FDA
- EPDM (to 120°F, 49°C), 3A spec.
- Jorlon (to 400°F, 204°C), 3A & FDA

O-Ring Materials

- EPDM (to 275°F, 135°C) - 3A & FDA
- Teflon-Encapsulated Viton (to 400°F, 204°C) - 3A & FDA

Shutoff: ANSI Class III hard seat

Body Pressure Temperature Rating: EPDM/Jorlon
(dependent upon construction)

Valve Size	PSIG @ 100°F	PSIG @ 250°F	ΔP
3/4", 1"	200	150	150
1-1/2"	125	100	100
2", 3"	100	75	75

Note: Max temp for 3A/EDPM is 120°F; 3-8 spring range has a max of 40psi.

Set Point Spring Ranges PSI (Bar)		
1/2"-1"	1-1/2"	2"-3"
3-8 (0,2-0,5)	3-25* (0,2-1,7)	5-25 (0,34-1,7)
5-30 (0,34-2,1)	10-25 (0,7-1,7)	10-25 (0,7-1,7)
15-50 (1,0-3,4)	15-40 (1,0-2,7)	15-60 (1,0-4,1)
35-90 (2,4-6,2)	35-85 (2,4-5,8)	
50-105 (3,4-7,2)		

*EPDM Diaphragm only

Cv (Kv) Ratings:

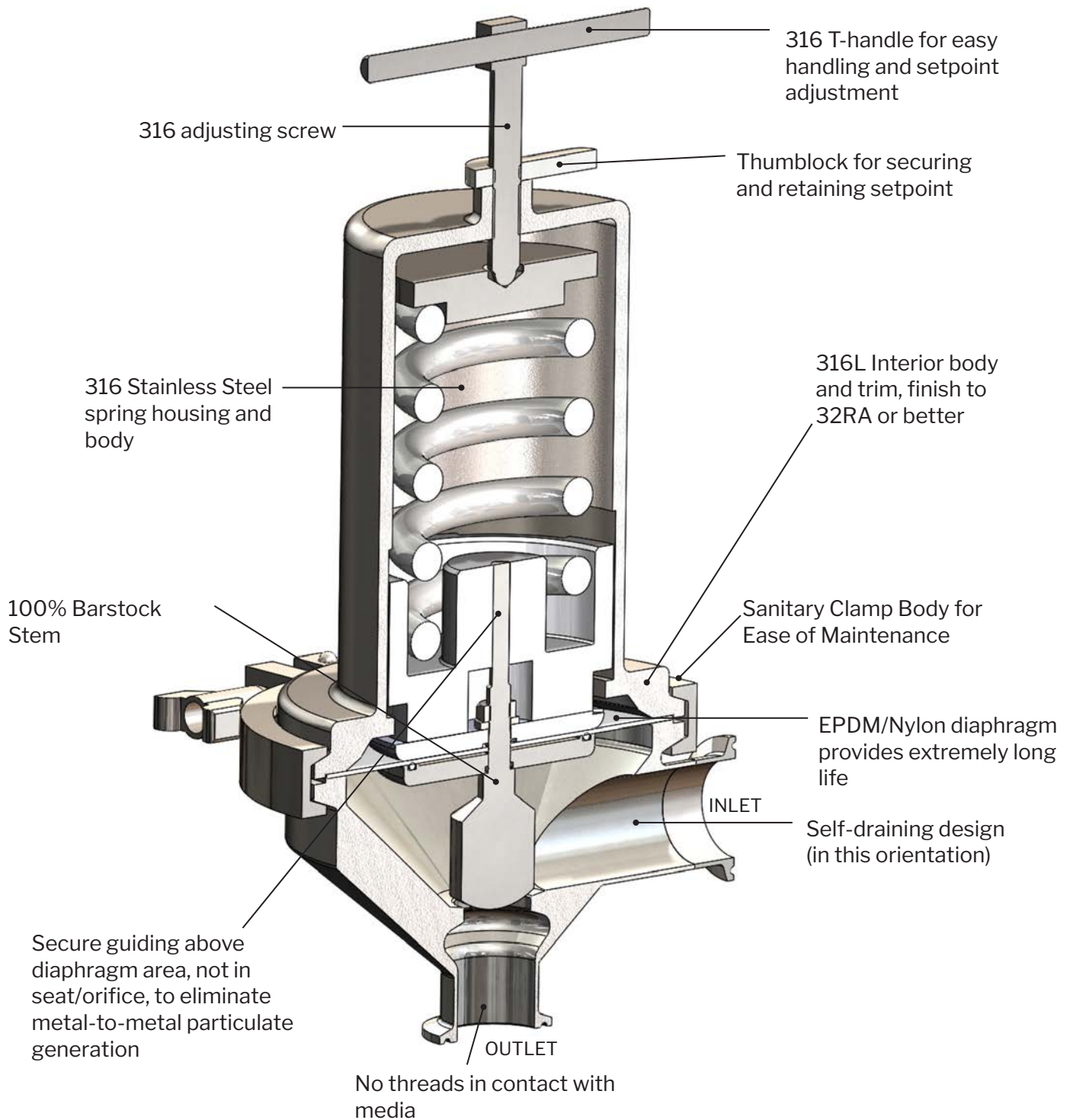
Valve Size	Available Cv (Kv)	Cv for Relief Valve Sizing
3/4"	1.5 (1,3)	4.5 (3,9)
1"	3.0 (2,6); 5.5 (4,7)	10.7 (9,2)
1-1/2"	10.0 (8,6)	26.3 (22,6)
2"	19.0 (16,3)	56.5 (48,6)
3"	28.0 (24,1)	67.1 (57,7)

Certifications



Conforms to EC 2023-2006

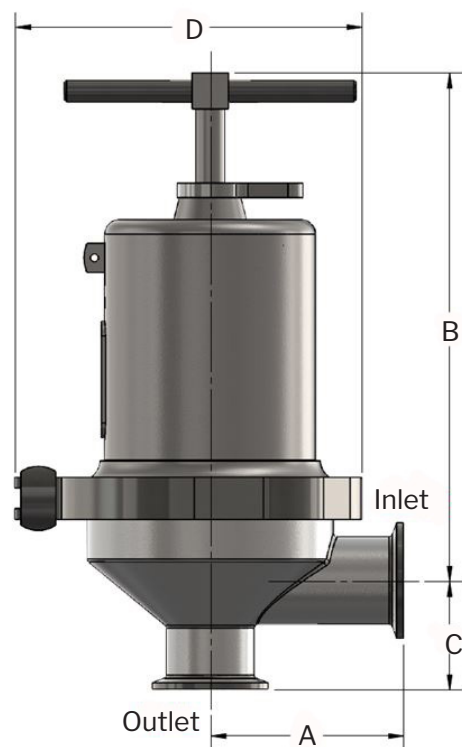
FEATURES & BENEFITS



APPLICATIONS

The FB5C is suitable for a variety of process and clean utility applications in the food, beverage, dairy and health and beauty industries including: CIP, SIP, centrifuges, autoclaves, culinary equipment, sterilizers, process tanks, nitrogen blanketing, etc.

DIMENSIONS



F & B Valve	Dimensions (inches)				Weight Lbs
	A	B	C	D	
3/4" Back Pressure Regulator	3.29	8.33	1.50	5.95	9.64
1" Back Pressure Regulator, Ø0.540 Orifice	3.31	8.74	1.87	5.95	11.44
1" Back Pressure Regulator, Ø0.758 Orifice	3.31	8.74	1.87	5.95	11.39
1-1/2" Back Pressure Regulator	4.20	10.98	2.57	8.78	23.83
2" Back Pressure Regulator	5.75	17.76	2.68	10.95	64.39
3" Back Pressure Regulator	6.00	17.81	3.23	10.95	70.97

FB5C SERIES SANITARY BACK PRESSURE REGULATORS

ORDERING SCHEMATIC

Model	—	Size	—	Body Material	/	1 & 2	3 & 4	5 & 6	7 & 8	9 & 10	11 & 12

Model
FB5C Sanitary Back Pressure Regulator

Size
075 3/4"
100 1"
150 1-1/2"
200 2"
300 3"

Body Material
6L 316L SST

1 & 2	Body
Finish	Cv
A 32 Ra Interior / Cast Exterior (Standard)	A 1.5
	D 3.0
	K 5.5
	M 10
	N 19
	P 28
ZZ Non-Standard	

3 & 4	Trim
Finish	Cv & Seat
A 32 Ra (Standard)	A Cv 1.5 Hard Seat
	B Cv 3.0 Hard Seat
	L Cv 5.5 Hard Seat
	P Cv 10 Hard Seat
	S Cv 19 Hard Seat
	V Cv 28 Hard Seat
ZZ Non-Standard	

5 & 6	O-Ring / Diaphragm
EE	EPDM / EPDM Diaphragm
TY	Teflon Encaps. Viton / Jorlon Diaph.
ZZ	Non-Standard

7 & 8	Range
Adjusting Screw Finish	Range (PSI)
A Standard	A 3-8
	B 3-25
	C 5-25
	D 5-30
	E 10-25
	F 5-25
	P 15-25
	G 15-40
	H 15-50
	J 15-60
	K 25-85
	L 35-90
	Q 50-105
ZZ Non-Standard	

9 & 10	Diaphragm
EP	EPDM
JL	JORLON
ZZ	NON - STANDARD

11 & 12	Actuator
AA	Standard



Richards Industrials reserves the right to make revisions to its products, specifications, literature, and related information without notice.