



Steriflow Food and Beverage FB5CPM Valve Series

3A Sanitary Air Loaded Pressure and Back Pressure Regulators

The FB5CPM (inlet) and FB6CPM (outlet) are air loaded sanitary constant pressure modulating valves, designed to allow the user to change setpoints remotely via a cabinet or panel mounted air regulator, or through a distributed control system or PLC, using an I-P transducer.

The CPM valve is an ideal choice for automating and maintaining constant pressure set points on the inlet side of the valve for control operations, whether they are process set points or points to fully open the valve for rinse, CIP or SIP. The valve is preferred in HTST/UHT Pasteurization, after Heat Exchangers, Separator equipment, mixing, bottling lines, etc.

FEATURES

- FB5CPM (inlet) valve automatically opens with increased flow.
- FB6CPM (outlet) valve automatically closes with increased flow.
- Compact lightweight design significantly reduces the installation space and weight if mounting the valve on a process skid.
- Permits full automation of Process, Rinse, CIP and SIP setpoints.
- Allows for constant pressure modulation when needed
- Optimized Jorlon diaphragm material, surface area and support system for unsurpassed performance and life.
- Accessory I/P or self-relieving Air regulator available for automated, and/or remote set point control
- 3A Certification 53-07

*CRN Registration Number Available For Specific Models – Contact Factory



APPLICATIONS

A wide variety of applications exist for the FB5CPM in the food, beverage, health, beauty and other industries.

Processes include but are not limited to:

- HTST, UHT Process control
- Pump pressure control
- Process overpressure control
- CIP system pressure control
- Pressure bypass control
- Fill / Finish Lines
- Mixing

OPTIONS

An accessory I/P wired to a stand alone controller, PLC or DCS and an air supply will allow fully automated operation based on menu commands. Users may also opt to control the set point remotely via pneumatic tubing from a remote (panel or cabinet mounted) self-relieving instrument air regulator. Note: If using regulator we recommend the JSRLF-025 with Teflon Seat, or JSRLF-025 (EPDM seat), specified with a 0.2 Cv (0,173 Kv) and self relieving option.



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SPECIFICATIONS - FB5CPM

Sizes: 3/4" (DN20), 1" (DN25), 1 1/2" (DN40), 2" (DN50), 3" (DN80)

Wetted Material: ASME SA479 316L (UNS 31603) is standard. EN 10272:2000 GR 1.4435, AL-6XN®, Hastelloy®C-22 and others are optional.

End Connections: ASME Tri-Clamp, others consult factory

FB5CPM Cv:

Valve Size	Avail. Cv	Avail. Kv	Cv for Relief Valve Sizing	Kv for Relief Valve Sizing
3/4" (DN20)	1.5	1,3	1.8	1,56
1" (DN25)	3,0; 5,5	2,6; 4,7	5,4, 7,3	4,7; 6,4
1-1/2" (DN40)	10,0	8,6	12	10,32
2" DN50	19,0; 30,0	16,3; 26	22,8	19,56
3" (DN80)	28,0	24,1	33,6	28,9

Seat Material: Integral Hard Seat: 316L (Class IV Shutoff); Optional Seat Material: Teflon, Jorlon and Peek (all Class VI Shutoff, not 3A approved)

Actuator Housing: Air-loaded, as cast CF3M 316LSS

O-Ring Material:

- FDA and approved Teflon-Encapsulated Viton
- Optional: EPDM & Viton

Cv: Consult Factory if alternate Cvs/Kvs are required.

Diaphragm Material: Jorlon (FDA, 3A approved)

FB5CPM Min Pressure Drop: 3 psi (0,2 bar)



Optional: I/P with 4-20mA Transducer or Recommended J-Series LowFlow Regulator



Max Set Point Range:

- FB5CPM (inlet) set point range:
1/2" - 1" (DN15-DN25): 10-105 psi (0,7-7,2 bar)
1-1/2" (DN40): 10-85 psi (0,2 - 5,9 bar)
2" (DN50): 5-60 psi (0,7 - 4,1 bar)
3" (DN80): 5-60 psi (0,7 - 4,1 bar)

High Temp Valves*

Valve Size	PSIG @ 100°F (38°C)	PSIG @ 350°F (149°C)
3/4" 1" (DN20, DN25)	350 (24,1 bar)	225 (15,5 bar)
1-1/2", 2" (DN40, DN50))	200 (13,8 bar)	125 (8,6 bar)
3" (DN80)	175 (12,1 bar)	80 (5,5 bar)

* See below for 3A requirements

***3A Approved Chart**

Valve Size	PSIG @ 100°F (38°C)	PSIG @ 300°F (149°C)
3/4" 1" (DN20, DN25)	350 (24,1 bar)	250 (17,2 bar)
1-1/2", 2" (DN40, DN50))	200 (13,8 bar)	200 (13,8 bar)
3" (DN80)	175 (12,1 bar)	100 (6,9 bar)

Note: Max temp for 3A/EPDM is 120°F (49°C)

O-Ring Temps:

- Buna = 225°F
- EPDM = 275°F
- Silicone = 350°F
- TFE/Viton = 350°F
- Viton = 350°F

Soft Seat Temps:

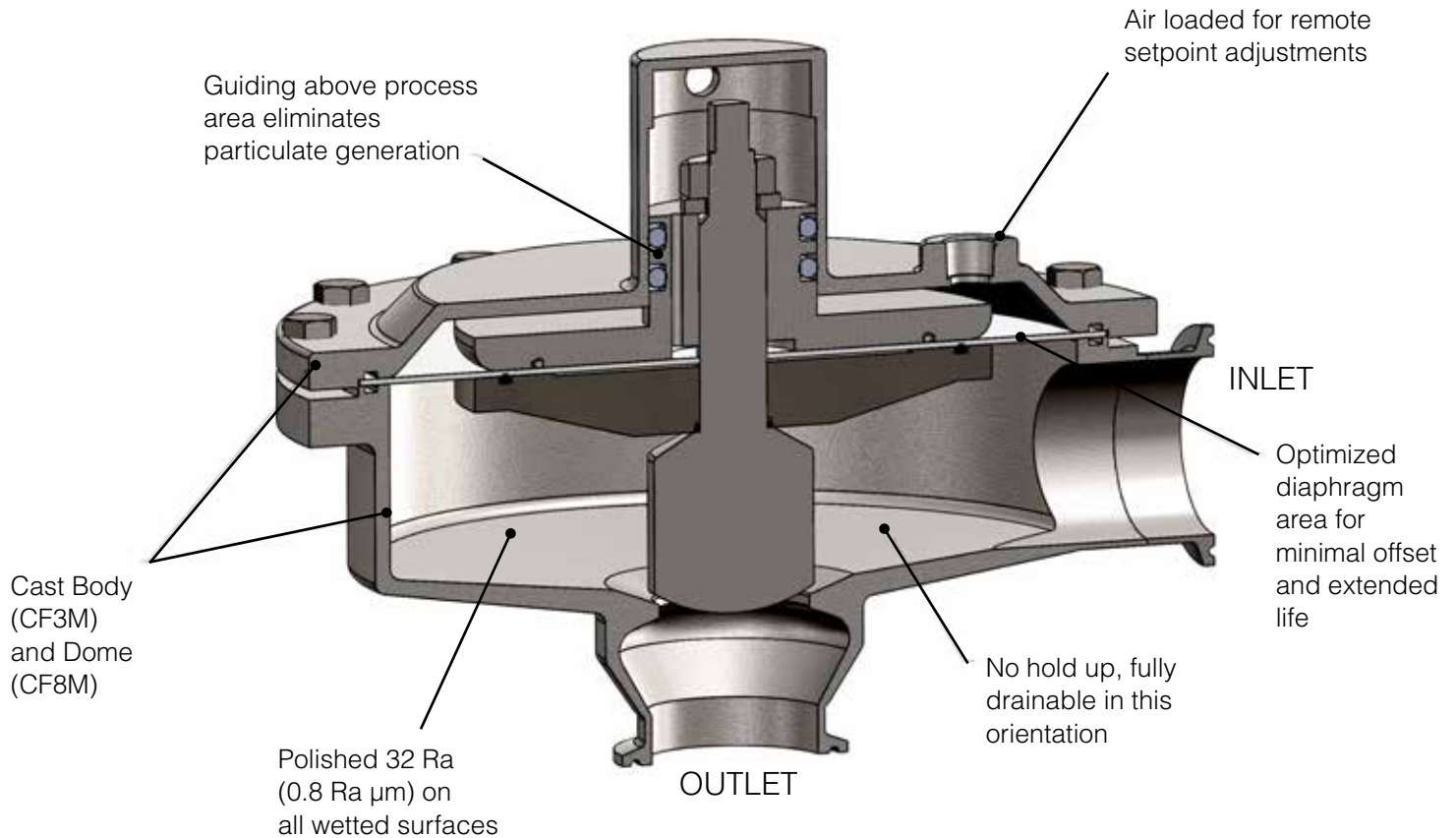
- PEEK= 350°F
- Jorlon = 300°F
- TFE = 150°F

Maximum Air Supply Pressure: 110 psi (7,6 bar)

Weight:

- 3/4" - 8 lbs (3,6 kgs) – Stainless Steel
- 1" - 8 lbs (3,6 kgs) – Stainless Steel
- 1-1/2" - 18 lbs (8,2 kgs) – Stainless Steel
- 2" - 23 lbs (10,4 kgs) – Stainless Steel
- 3" - 33 lbs (15 kgs) – Stainless Steel

FB5CPM INLET VALVE SERIES CUT-A-WAY



CLEAN-IN-PLACE / STEAM-IN-PLACE

To open valve for cleaning, remove the air load. The valve will open automatically once the cleaning media begins to flow. This will allow the valve to drain completely during the cleaning cycle.

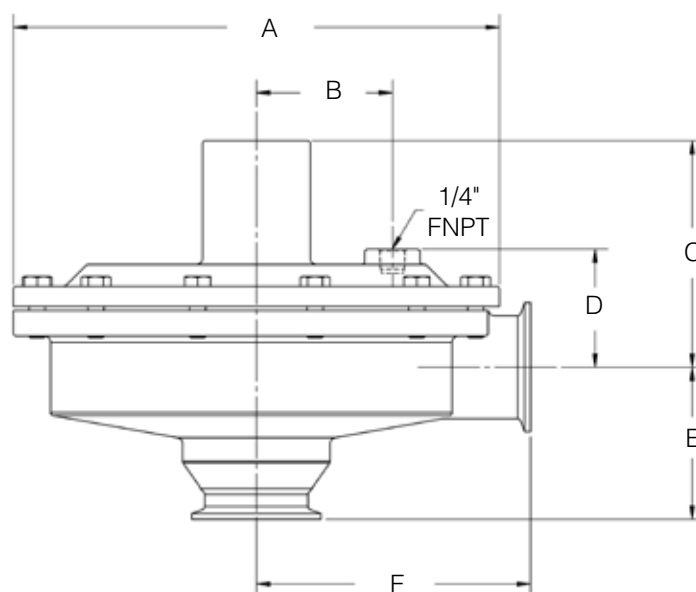
WEBSITE RESOURCES

For STEP files, Installation and Maintenance Manuals, the 2019-PMO (Pasteurized Milk Ordinance) Conformity, etc. please visit our website at www.steriflowfoodandbev.com.

Installation Notes:

- As with all regulators and control valves, optimal flow performance can only be achieved with a non-turbulent flow profile. The CPM valve should be installed with 3 feet (0,9m) of straight pipe on either side of the valve.
- A pressure gauge, or transmitter reading upstream of the CPM valve should be used to make the final setpoint adjustment.

DIMENSIONS FB5CPM



Size	Dimensions in. (mm.)					
	A	B	C	D	E	F
3/4"	5.70 (144,8)	1.38 (34,9)	2.71 (68,9)	1.63 (41,4)	1.50 (38,1)	3.29 (83,6)
1"	5.70 (144,8)	1.38 (34,9)	2.84 (72,1)	1.75 (44,5)	1.64 (41,7)	4.0 (101,6)
1-1/2"	7.22 (183,4)	1.91 (48,6)	3.79 (96,3)	1.90 (48,4)	2.53 (64,3)	4.21 (107,0)
2"	9.47 (240,5)	2.65 (67,3)	4.41 (112,1)	2.30 (58,4)	2.96 (75,2)	5.34 (135,6)
3"	9.92 (251,9)	2.65 (67,3)	5.03 (127,8)	3.02 (76,7)	3.46 (87,9)	5.37 (136,4)

CONSTANT PRESSURE MODULATING VALVE - FB5CPM (INLET) SANITARY VALVE

ORDER SCHEMATIC

Model	Size	Material	1	2	3	4	5	6	7	8	9	10	11	12
FB5CPM	—	—	6L											

Model		
FB5CPM	Standard (3A Approved)	
FB5CPMHT	High Temp (Not 3A approved)	

Size*		
75	3/4 (DN20)	
100	1" (DN25)	
150	1 1/2" (DN40)	
200	2" (DN50)	
300	3" (DN80)	

Material		
6L	316L Stainless Steel	

1 & 2		Body		
		Finish		Cv (Kv)
	A	32 Ra (0.8 Ra µm)	A	1.5 (1,3)
		Interior/Cast Exterior (std)		
			G	3.0 (2,6)
			K	5.5 (4,76)
			M	10 (8,65)
			N	19 (16,43)
			P	28 (24,19)
	ZZ	Non-Standard		

3 & 4		Trim		
		Finish	Cv (Kv) & Seat	
	A	32 Ra (0.8 Ra µm)	A	1.5 (1,3) Hard Seat
			9	1.5 (1,3) Teflon Seat
			7	1.5 (1,3) PEEK Seat
			E	3.0 (2,6) Hard Seat
			F	3.0 (2,6) Teflon Seat
			G	3.0 (2,6) Jorlon Seat
			B	3.0 (2,6) PEEK Seat
			L	5.5 (4,76) Hard Seat
			M	5.5 (4,76) Teflon Seat
			N	5.5 (4,76) Jorlon Seat
			O	5.5 (4,76) PEEK Seat
			P	10 (8,65) Hard Seat
			Q	10 (8,65) Teflon Seat
			R	10 (8,65) Jorlon Seat
			3	10 (8,65) PEEK Seat

3 & 4		Trim, continued.		
		Finish	Cv (Kv) & Seat	
	A	32 Ra (0.8 Ra µm)	S	19 (16,43) Hard Seat
			T	19 (16,43) Teflon Seat
			U	19 (16,43) Jorlon Seat
			4	19 (16,43) PEEK Seat
			V	28 (24,19) Hard Seat
			W	28 (24,19) Teflon Seat
			X	28 (24,19) Jorlon Seat
			Y	28 (24,19) PEEK Seat

5 & 6		O-Ring/Diaphragm	
	EJ	EPDM/Jorlon Diaphragm	
	TY	Teflon Encapsulated Viton/Jorlon Diaphragm	
	ZZ	Non-Standard	

7 & 8		I/P Or Loader Range		
		Type of Loader	Max Load (PSI)	
	00	None	A	J-Series 25 psi (1,7 bar)
	A	4-20mA Transducer	C	J-Series 50 psi (3,4 bar)
	B	J Series Loader	E	J-Series 100 psi (6,9 bar)
			P	I/P 60 psi (4,1 bar)
			H	I/P 120 psi (8,3 bar)
	ZZ	Non-Standard		

9 & 10		Diaphragm	
	JL	Jorlon	

11 & 12		Actuator	
	AA	Standard	
	ZZ	Non-Standard	

DOCUMENTATION

A Certificate of Compliance is available at no charge when requested at time of order. The "Unicert" is a chargeable document. If needed, a "Unicert" must be requested at time of order.



Steriflow Food and Beverage reserves the right to make revisions to its product, specifications, literature and related information without notice. Please visit our website at www.steriflowfoodandbev.com for the latest information on our products.

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