



Steriflow Food and Beverage CPM 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 53-06

*CRN Registration Number Available



APPLICATIONS

A wide variety of applications exist for the FBCPM 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 JRLF-025 with Teflon Seat, or JRLF-025 (EPDM seat). specified with a .2 Cv (.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

SPECIFICATIONS - FB6CPM

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

FB6CPM 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)	4.5	3,9	5.4	4,7
1-1/2" (DN40)	10.0	8,6	12	10,32
2" DN50	19.0	16,3	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)

Max Set Point Range:

- FB6CPM (outlet) set point range: 20-100 PSI (1,4 - 6,9 bar) - see chart on page 6.



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



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:

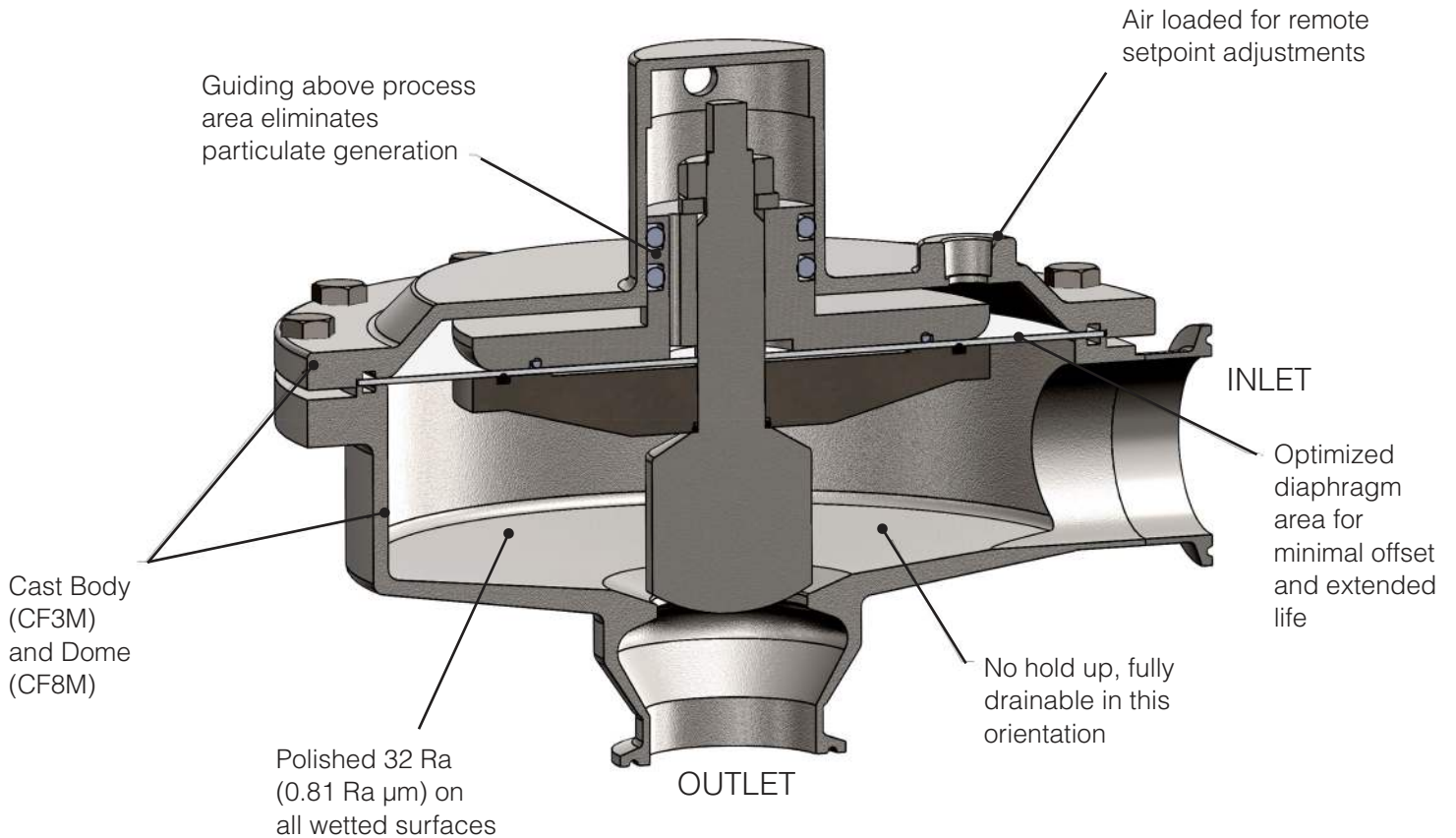
- PEEK= 350°F
- Jorlon = 300°F
- TFE = 150°F

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



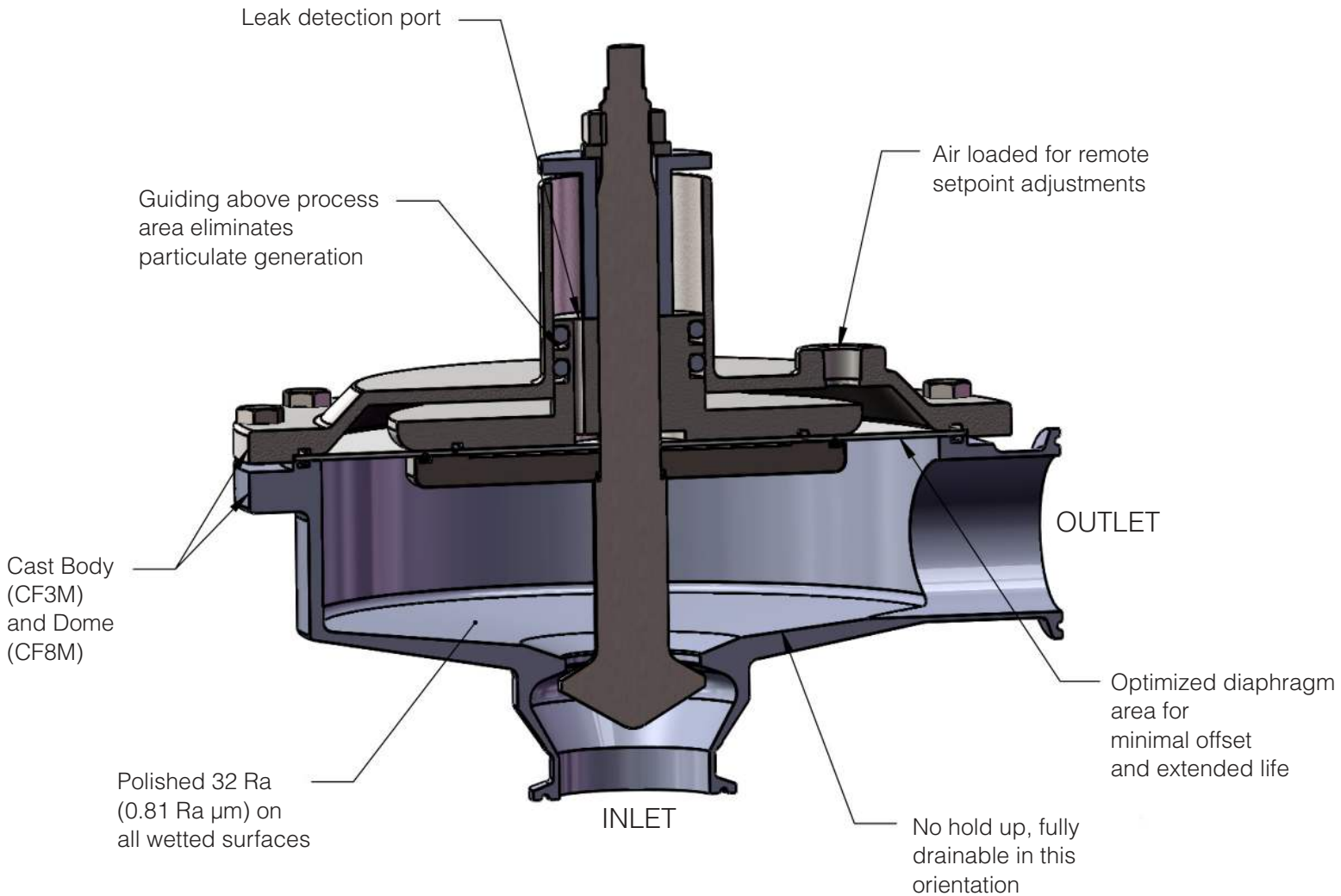
CLEAN-IN-PLACE / STEAM-IN-PLACE

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.

FB6CPM OUTLET VALVE SERIES CUT-A-WAY



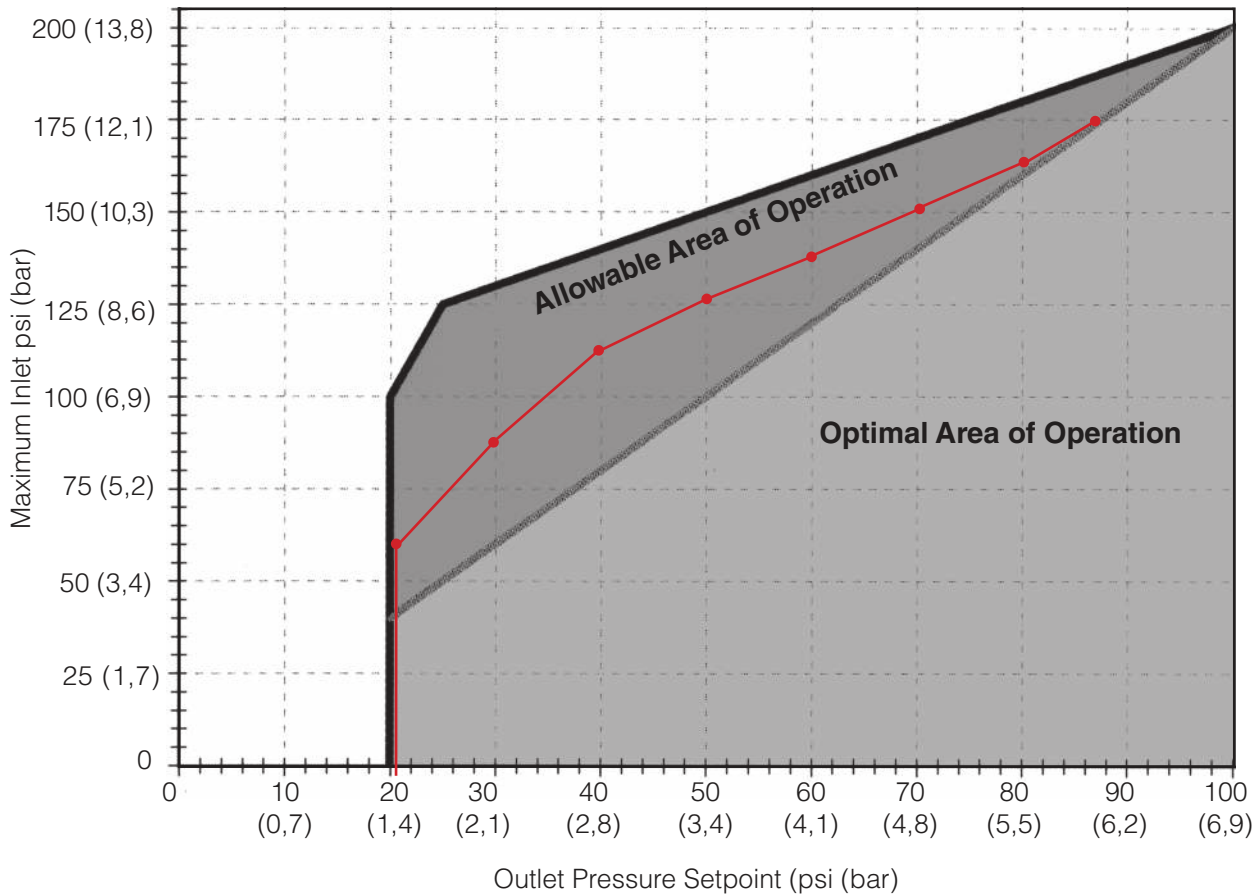
CLEAN-IN-PLACE / STEAM-IN-PLACE

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.

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FB6CPM INLET VALVE MAXIMUM INLET PRESSURE VS. SETPOINT



Determining Allowable & Optimal Setpoint

Reading the graph: To determine allowable setpoint select your inlet pressure from the Y-axis on the above graph. Outlet pressure setpoint should be equal to or greater than the value on the X-axis where the inlet pressure and heavy diagonal line intersect. In other words, the differential pressure (between inlet pressure and outlet pressure setpoint) must be less than or equal to 100 psig. In addition the minimum outlet pressure setpoint is 20 psig.

For optimal results (minimum offset, more stability) the ratio of inlet pressure to the outlet pressure setpoint (differential pressure) should be 2:1 or less, and never greater than 100 psig. For example, if the inlet pressure is 150 psi, the allowable outlet pressure setpoint would be 50 psi or above. However, the optimal outlet pressure setpoint (greater stability and less droop) is 75 psig or greater.

* The red line represents the maximum outlet setpoints allowed for the 3" FB6CPM.

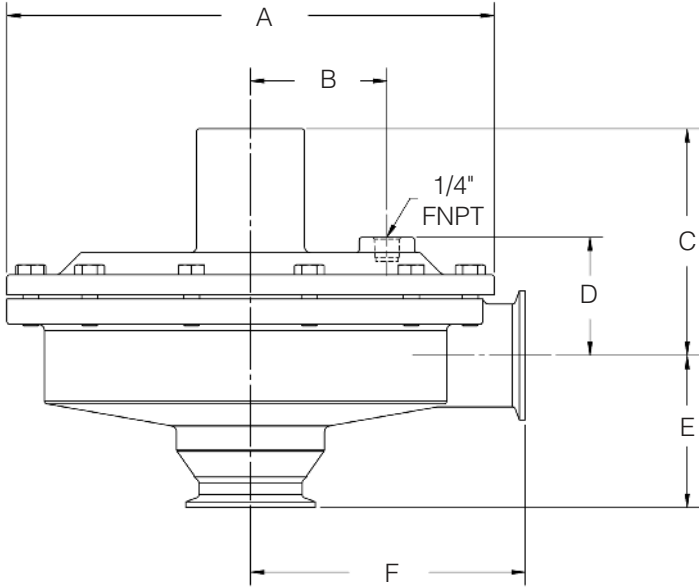
Installation Notes

- As with all regulators and control valves, optimal flow performance can only be achieved with a non-turbulent flow profile. The FB6CPM should be installed with 3 feet of straight pipe on either side of the valve.
- A pressure gauge, or transmitter reading downstream of the FB6CPM should be used to make the final setpoint adjustment.

Installation Notes:

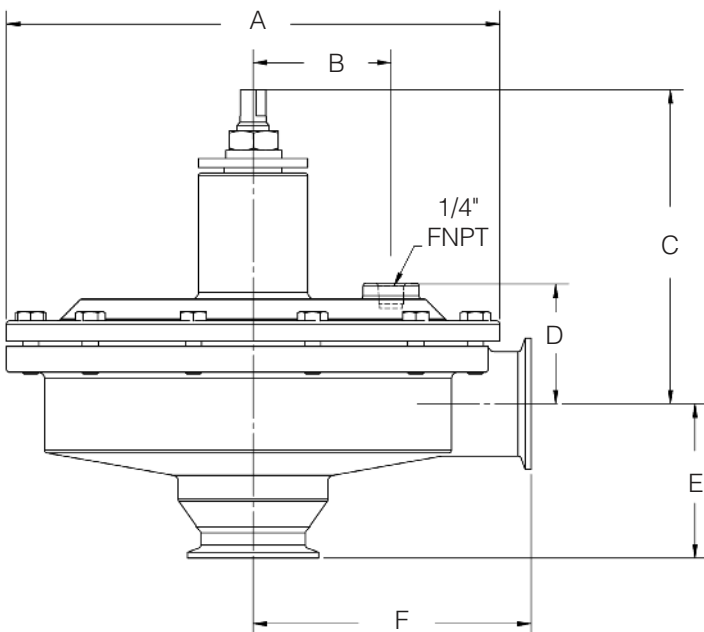
- As with all regulators and control valves, optimal flow performance can only be achieved with a non-turbulent flow profile. The CPM valve should be installed with 3 feet (0,9m) of straight pipe on either side of the valve.
- A pressure gauge, or transmitter reading upstream of the CPM valve should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

DIMENSIONS FB6CPM



Size	Dimensions in. (mm.)					
	A	B	C	D	E	F
3/4"	5.70 (144,8)	1.38 (34,9)	2.94 (74,8)	1.63 (41,4)	1.50 (38,1)	3.29 (83,6)
1"	5.70 (144,8)	1.38 (34,9)	3.08 (78,1)	1.75 (44,5)	1.64 (41,7)	--
1-1/2"	7.22 (183,4)	1.91 (48,6)	4.29 (109,0)	1.90 (48,4)	2.53 (64,3)	--
2"	9.47 (240,5)	2.65 (67,3)	6.10 (154,9)	2.30 (58,4)	2.96 (75,2)	5.34 (135,6)
3"	9.92 (251,9)	2.65 (67,3)	6.76 (171,7)	3.02 (76,7)	3.46 (87,9)	5.37 (136,4)

ORDER SCHEMATIC

Model	Size	Material	1	2	3	4	5	6	7	8	9	10	11	12
FB-5CPM	—	—	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 (0.81 Ra µm) Interior/Cast Exterior (std)	A	1.5 (1,3)
		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 (0.81 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 (0.81 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.

FB6CPM (OUTLET) SANITARY VALVE

ORDER SCHEMATIC

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

Model	
FB6CPM	Standard (3A Approved)
FB6CPMHT	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 (0.81 Ra μ m) Interior/Cast Exterior (std)	A 1.5 (1,3)
			K 4.5 (3,9)
			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 (0.81 Ra μ m)	A 1.5 (1,3) Hard Seat
			1 1.5 (1,3) Teflon Seat
			2 1.5 (1,3) Jorlon Seat
			9 1.5 (1,3) PEEK Seat
			L 4.5 (3,9) Hard Seat
			J 4.5 (3,9) Teflon Seat
			K 4.5 (3,9) Jorlon Seat
			6 4.5 (3,9) 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 (0.81 Ra μ m)	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 (19,87) Hard Seat
			W 28 (19,87) Teflon Seat
			X 28 (19,87) Jorlon Seat
			Y 28 (19,87) 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

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