

# Mark 96/96C

## SANITARY PRESSURE REGULATORS

The Mark 96 Sanitary Pressure Regulator is designed to regulate pressure in systems requiring the maintenance of sanitary conditions.

The MK96 operates by sensing pressure under the diaphragm on the downstream side of the seat. As the downstream pressure approaches the set point, the force caused by the pressure acting on the diaphragm overcomes the force of the range spring, and the plug begins to move up toward closed. This reduces the downstream pressure and maintains the set point. If the pressure underneath the diaphragm begins to fall, the spring forces the plug to move down towards open, to allow the set point to be maintained.

### FEATURES

- Soft seat capability for ANSI Class VI shutoff
- No guiding surfaces in the fluid — prevents particulate generation
- 100% 316L barstock body — no wetted parts made from forgings or castings
- Self-draining
- No threads in contact with service media — prevents accumulation of contaminants
- Easy to disassemble for cleaning
- Clean-in-Place, Steam-in-Place — dome lock pin to allow CIP/SIP.
- Jorlon Diaphragm: PTFE based material provides excellent chemical resistance, extremely long life in steam service. Far superior to other elastomer or metal diaphragm materials.

### DOCUMENTATION

The following documentation is available, free of charge, from our factory upon request at time of ordering:

- Traceable Material Certificates (free of charge for body and ferrules)
- FDA or USP Class VI certificates on soft seals
- Final Test Reports
- Certificate of Surface Finish
- Certificate of Compliance/Certificate of Origin



### AVAILABLE FINISHES

#### Body

- **Standard:** 20 ra mechanical finish and electropolish on inside wetted surfaces; machine finish and electropolish on exterior
- **Optional:** 20 ra mechanical finish on external surfaces; 8 ra finish on internal or external finishes

#### Stem

- **Standard:** 20 ra mechanical finish and electropolish
- **Optional:** 8 ra finish

#### Spring Housing

- **Standard:** electropolished on 3/4", 1", & 1-1/2"; machine finish on 2" & 3"
- **Optional:** 20 ra mechanical finish on external surfaces; 8 ra finish on external surfaces on all sizes; electropolish on 2" & 3" sizes

#### Adjusting Screw

- **Standard:** electropolished
- **Optional:** 20 ra mechanical finish; or 8ra finish on non-thread portion

### APPLICATIONS

A wide variety of applications exist for the MK96 in the pharmaceutical, biotech, healthcare, food & beverage and other industries.

**STERIFLOW™**

Sanitary Products by Jordan Valve

#### STERIFLOW by Jordan Valve

3170 Wasson Road • Cincinnati, Ohio 45209  
Telephone 513-533-5600 • Fax 513-871-0105  
Toll-Free Telephone: 800-543-7311 (U. S. A. & Canada)  
E-Mail: info@richardsind.com • URL: www.jordanvalve.com

**SPECIFICATIONS**

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

**End Connections:**

- Quick disconnect fittings (to match Tri-Clamp® fitting)
- DIN/ISO sanitary connections

**Body Connections:**

- Mark 96 – Bolted — Standard for all sizes
- Mark 96C – Clamped — 3 segment standard (requires Jorlon or EPDM diaphragm material); 2 piece bolted optional

**Body & Trim Materials:** 316L Stainless Steel (ASTM A479)

**Seat Materials:**

- Standard hard seat — integral 316L SST seat
- Optional soft seat (For 1" size and Cv 1.5 and above) — Jorlon for steam and hot gas service to 338°F (170°C) or TFE for cold gas and liquid service to 150°F (65°C)

**Spring Housing Materials:**

- CF8M cast SST (3/4" - 1")
- Fabricated 316L SST (1-1/2" - 3")

**Diaphragm Materials:** (all diaphragms and o-rings are FDA approved)

- 316L SST (Mark 96 only)
- EPDM/Nylon (to 275°F, 135°C)
- Teflon-Coated Viton (to 400°F, 204°C) in 3/4" & 1" Mark 96 sizes only
- Jorlon (to 450°F, 232°C)

**O-Ring Materials** (all o-ring materials meet 3-A and FDA requirements. USP Class VI certified elastomers also available):

- EPDM (to 275°F, 135°C)
- Buna-N (to 225°F, 107°C)
- Viton (to 400°F, 232°C)
- Silicone (to 450°F, 232°C)
- Teflon-Encapsulated Viton (to 400°F, 204°C)
- Teflon-Encapsulated Silicone (to 400°F, 204°C)

**Shutoff:** ANSI Class III hard seat or Class VI soft seat

**Body Pressure/Temperature Rating:** (dependant upon construction)

Valve Size	PSIG @ 70°F	PSIG @ 450°F
3/4" & 1"	350 (24,1 bar)	250 (17,2 bar)
1-1/2", 2" & 3"	200 (13,8 bar)	200 (13,8 bar)

Valve Size	PSIG @ 100°F	PSIG @ 225°F
3/4" & 1" Clamp Body	250 (17,2 bar)	200 (13,8 bar)

**Set Point Spring Ranges:**

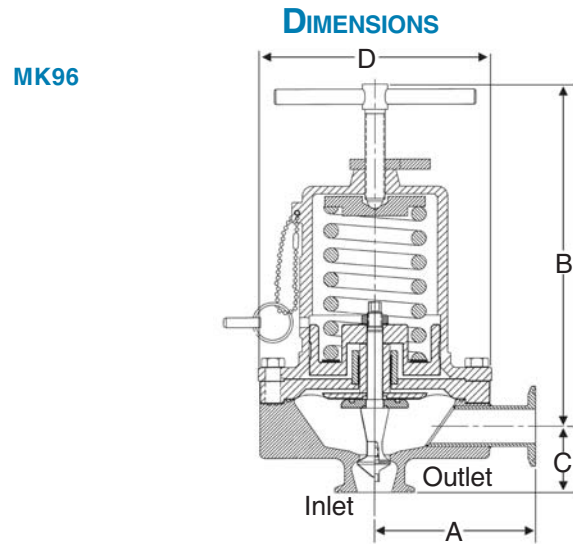
Valve Size	Set Point Ranges, PSI (Bar)
3/4" & 1"	2-8* (0,1-0,5), 5-25 (0,37-1,7), 15-50 (1,0-3,4) or 35-135 (2,4-9,3)
1-1/2"	10-25 (0,7-1,7), 15-50 (1,0-3,4) or 35-100 (2,4-6,9)
2"	10-24 (0,7-1,7) or 15-60 (1,0-4,1)
3"	15-25 (1,0-1,7) or 15-60 (1,0-4,1)

\* Range available with elastomer diaphragm only. Maximum pressure drop 40 psi

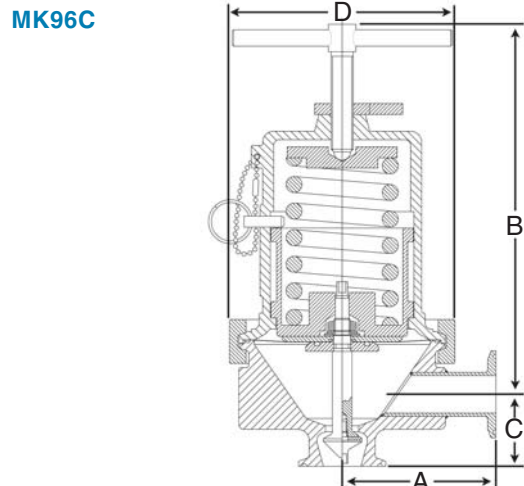
**Cv (Kv) Ratings:**

Valve Size	Metal Diaphragm Cvs (Kvs)	Cv for Relief Valve Sizing
3/4"	0.5*, 1.5 (0,4*, 1,3)	3.8
1"	1.5, 2.5, 4.5 or 5.5** (1,3, 2,2, 3,9 or 4,7)	10.7
1-1/2"	4.5 or 10.0 (3,9 or 8,6)	26.3 (Ø1,185); 6.7 (Ø0.575)
2"	10.0 or 19.0 (8,6 or 16,3)	56.5 (Ø1,675) 16.5 (Ø0.904)
3"	10.0 or 23.0 (8,6 or 19,8)	67.1 (Ø1,825); 16.5 (Ø0.904)

\* Available only with clamped body; for 0.5 Cv, Teflon encapsulated orings not available \*\*Available only with elastomer diaphragm



Valve Size	Dimensions, Inches (mm)				Weight Lbs (Kgs)
	A	B	C	D	
3/4" (DN20)	3.29 (84)	8.00 (203)	1.50 (38,1)	5.70 (145)	18 (8,1)
1" (DN25)	4.00 (102)	8.00 (203)	1.64 (41,7)	5.70 (145)	20 (9,1)
1-1/2" (DN40)	4.21 (107)	10.50 (267)	2.53 (64,3)	7.25 (184)	40 (18,1)
2" (DN50)	5.34 (136)	17.50 (445)	2.96 (75,2)	9.50 (241)	90 (40,7)
3" (DN80)	5.34 (136)	18.00 (457)	3.46 (87,9)	9.50 (241)	98 (44,4)



Valve Size	Dimensions, Inches (mm)				Weight Lbs (Kgs)
	A	B	C	D	
3/4" (DN20)	3.29 (84)	8.30 (211)	1.50 (38,1)	5.20 (132)	18 (8,1)
1" (DN25)	3.50 (89)	8.44 (214)	1.64 (41,7)	5.20 (132)	20 (9,1)

MK96 SANITARY PRESSURE REGULATOR

**CAPACITY Cv AT VARIOUS DROOP %**

Mark 96	Set Pressure PSIG	Droop					Cv for Relief Valve Sizing
		5%	10%	15%	20%	30%	
3/4" 1.5 Cv 15 to 50 psi range	15	0.23	0.38	0.55	0.72	1.09	3.8
	20	0.28	0.49	0.72	0.96	1.50	
	25	0.33	0.60	0.90	1.22	1.50	
	1" 4.5 Cv 15 to 50 psi range	30	0.38	0.72	1.09	1.50	10.7
		35	0.44	0.84	1.29	1.50	
		40	0.50	0.97	1.49	1.50	
		45	0.56	1.10	1.50		
		50	0.62	1.22	1.50		
15		0.68	1.15	1.64	2.16	3.27	
20		0.83	1.47	2.16	2.89	4.50	
1-1/2" 10 Cv 15 to 50 psi range	25	0.99	1.81	2.70	3.67	4.50	26.3
	30	1.15	2.16	3.27	4.50		
	35	1.31	2.52	3.87	4.50		
	40	1.51	2.91	4.46	4.50		
	45	1.68	3.29	4.50			
	50	1.85	3.67	4.50			
	15	2.20	3.59	4.75	5.74	7.35	
	20	2.69	4.38	5.74	6.86	8.58	
2" 19 Cv 15 to 60 psi range	25	3.33	5.41	7.00	8.27	10.00	56.5
	30	3.80	6.09	7.80	9.11	10.00	
	35	4.23	6.71	8.49	9.82	10.00	
	40	4.65	7.28	9.11	10.00		
	45	4.89	8.23	10.00			
	50	5.30	8.87	10.00			
	15	3.38	5.65	7.77	9.75	13.38	
	20	4.15	7.08	9.75	12.22	16.60	
3" 23 Cv 15 to 60 psi range	25	5.22	9.08	12.58	15.79	19.00	67.1
	30	6.02	10.52	14.54	18.16	19.00	
	35	6.81	11.91	16.40	19.00		
	40	7.58	13.25	18.16	19.00		
	45	8.33	14.54	19.00			
	50	9.08	15.79	19.00			
	55	9.80	16.99	19.00			
	60	10.52	18.16	19.00			
	15	4.09	6.83	9.40	11.81	16.20	
20	5.03	8.56	11.81	14.79	20.10		
25	6.31	10.99	15.23	19.11	23.00		
30	7.29	12.73	17.60	21.98	23.00		
35	8.24	14.42	19.85	23.00			
40	9.17	16.04	21.98	23.00			
45	10.09	17.60	23.00				
50	10.99	19.11	23.00				
55	11.87	20.57	23.00				
60	12.73	21.98	23.00				

## MK96 SANITARY PRESSURE REGULATORS

## ORDER SCHEMATIC

1	—	2	—	3	/	4	5	6	7	8	9	10	11	12

1	Model	
96	Standard	
96C	Clamped Body 3/4" & 1"	

2	Size		
		Inches	DN
	075	3/4"	DN20
	100	1"	DN25
	150	1-1/2"	DN40
	200	2"	DN50
	300	3"	DN80

3	Body Material	
6L	316L	

4	Body Finish	
A	20ra Interior /63rms Exterior (Standard)	
B	20ra Interior/20ra Exterior	
C	8ra Interior/63rms Exterior	
D	20ra Interior/8ra Exterior	
E	8ra Interior/8ra Exterior	
F	8ra Interior/20ra Exterior	

5	Body Cv (Kv)		
		Cv	Kv
	A	1.5*; 0.5**	1,29*; 0,43**
	C	1.5**	1,29
	D	2.5*	2,15
	F	2.5**	2,15
	H	4.5*	3,87
	K	5.5*	4,73
	L	5.5**	4,73
	M	10.0*	8,60
	N	19.0*	16,34
	P	23.0*	19,78

\*MK96 only \*\*MK96C only

6	Trim Finish	
A	20ra (Standard)	
B	8ra	

Note: for 3-A certified MK96, please contact factory for correct options and ordering code.

7	Trim - Cv (Kv) & Seat				
	5	0.5 (0,43)	Hard Seat*	N	5.5 (4,73) Jorlon Seat
	A	1.5 (1,29)	Hard Seat	P	10 (8,6) Hard Seat**
	B	2.5 (2,15)	Hard Seat	Q	10 (8,6) Teflon Seat**
	C	2.5 (2,15)	Teflon Seat	R	10 (8,6) Jorlon Seat**
	D	2.5 (2,15)	Jorlon Seat	S	19 (16,34) Hard Seat**
	H	4.5 (3,87)	Hard Seat	T	19 (16,34) Teflon Seat**
	J	4.5 (3,87)	Teflon Seat	U	19 (16,34) Jorlon Seat**
	K	4.5 (3,87)	Jorlon Seat	V	23 (19,78) Hard Seat**
	L	5.5 (4,73)	Hard Seat	W	23 (19,78) Teflon Seat**
	M	5.5 (4,73)	Teflon Seat	X	23 (19,78) Jorlon Seat**

\*MK96C only \*\*MK96 only

8	O-Ring		O-Ring	
	B5	Buna-N/Jorlon* Cv 0.5	SL	Silicone/SST Diaph. **
	BU	Buna-N/SST Diaph**	TS	Teflon Encaps. Silicone/SST Diaph. **
	E5	EPDM/EPDM Diaphragm* Cv 0.5	TT	Teflon Encaps. Viton/TFE Vit. Diaph.**
	EE	EPDM/EPDM Diaph.	TV	Teflon Encaps. Viton/SST Diaph.**
	EP	EPDM/SST Diaph.**	TY	Teflon Encaps. Viton/Jorlon Diaph.
	SL	Silicone/SST Diaph.**	V5	Viton/Jorlon Diaph.* Cv 0.5
	S5	Silicone/Jorlon Diaph.* Cv 0.5	VT	Viton/SST Diaph.**

\*MK96C only \*\*MK96 only

For USP Class VI o-rings ordering codes, please contact factory.

9	Adjusting Screw Finish (Except Threads)	
	A	Electro-Polished (Standard)
	B	20ra
	C	8ra

10	Range PSI (Bar)			
	A	2-8* (0,1-0,6)	H	15-50 (1,0-3,4)
	C	5-25 (0,3-1,7)	J	15-60 (1,0-4,1)**
	E	10-25 (0,7-1,7)**	M	35-100 (2,4-6,9)**
	P	15-25 (1,0-1,7)**	N	35-135 (2,4-9,3)

\*MK96 with elastomer diaphragm only \*\*MK96 only

11	Diaphragm			
	6L	SST*	G5	Jorlon ** Cv 0.5
	EP	EPDM	JL	Jorlon
	E5	EPDM** Cv 0.5		

\*MK96 only \*\*MK96C only

12	Actuator Finish			
	AA	Standard	CA	8ra Exterior
	BA	20ra Exterior	DA	Electro-Polished for 2" & 3"***

\*MK96C only \*\*MK96 only

Other configurations may be available – contact factory for assistance