JSRLF Series

Low Flow Pressure Reducing Valves for Bio, Pharma and High Purity Gas Application

New Option!
EPDM seat for low lockup and tight shutoff on no flow or deadhead blanketing applications

The Steriflow JSRLF Series line of low flow pressure regulators have the ability to handle very high pressures and very low flows. These valves are most often used in biopharmaceutical and pharmaceutical research, and production facilities for clean gas flow regulation.

The durable valve body and metal trim components are machined from ASTMA479 316L SST barstock. The standard finish is ASME BPE SF5 (20Ra micro-inch, electropolished), SF1 non-electropolished valves are available. The valve is outfitted with the rugged Jorlon diaphragm and Teflon, PEEK and EPDM seats and seals that are all FDA approved, USP Class VI compliant materials. These materials of construction enable J-Pure to withstand the rigors of SIP and CIP processes if required.

Features

- Top entry design facilitates in-line cleaning and maintenance
- Barstock construction guarantees material integrity and quality surface finish
- Four Cv's between 0.01 and 0.2 and six spring ranges guarantees a valve that will fit your application
- Optimized internal volume
- Proprietary Jorlon diaphragm material provides exceptionally long life
- Soft seat material for ANSI Class VI shutoff

Documentation

The following documentation is shipped at no charge:

- Steriflow Unicert, a QC signed Certificate of Compliance for:
  - Material, listing heat numbers with attached MTR's
  - Surface Finish
  - FDA/USP Class VI - for all thermoplastic and elastomers
- Traceability:
  - Each individual product serial number is traceable to the Unicert serial number, heat numbers and attached MTR's

Other documents must be requested at time of RFQ, or order:

- ADI/TSE Free, Certified Test reports, Certificate of Origin.

Applications

Ideal for biopharmaceutical and pharmaceutical research and production facilities and equipment for clean gas flow regulation.

High purity purge, or blanket gas
Sparge pressure regulation
Motive force for fluid movement
Clean air, N_2, CO_2, O_2, AR

NOTE: Though not drainable in any installation orientation, this valve can be used on clean steam or non-cavitating liquids with Steriflow engineering application approval.

STERIFLOW
a division of Jordan Valve

Steriflow by Jordan Valve
3170 Wasson Road • Cincinnati, OH 45209
513.533.5600 • 800.543.7311 • 513.871.0105 (f)
steriflow@richardsind.com • www.steriflowvalve.com

Specifications

Sizes: 1/4" (DN8), 3/8" (DN10), 1/2" (DN15)

End Connections: ASME BPE, DIN, ISO Tri-clamp, or Tube Weld end; NPT

Gauge Ports: 1/4" FNPT is standard. Contact Factory for Tri-Clamp, VCR, or other alternatives.

Soft Seat Materials for ANSI Class VI Shut-off

- PTFE to +252°F (122°C) continuous or 275°F (135°C) intermittent [not to exceed 15 min. in a one hour period] FDA, USP Class VI
- PEEK to +350°F (177°C), FDA & USP Class VI
- EPDM to +275°F (135°C), FDA & USP Class VI*

* Suggested for low lockup and tight shutoff on no flow or deadheaded blanketing applications

Body Material

- ASTM A479 316L SST
- Contact factory for other body/trim/seat materials

Diaphragm Material: Jorlon, PTFE™, FDA & USP Class VI

Maximum Inlet Pressure:

- Tube End & Tri-Clamp: 450 psig (31,0 bar)
- NPT: 4000 psig (276 bar) - PTFE or PEEK
- NPT: 350 psi (24,1 bar) - EPDM

Optional Cleaning Specifications

- Clean for Oil-Free
- O2 Cleaning complying with ASTM G93-03 2011 and CGA G-4.1-2009

Pressure at Maximum Temperature:

- Tube End and Tri-Clamp: 450 psi @ 350°F (31,0 bar @ 177°C) with PEEK seats; 450 psi @ 150°F (31,0 bar @ 66°C) with PTFE seats; 350 psi @ 275°F (24,1 bar @ 135°C) with EPDM seats
- NPT: 2165 psi @ 350°F (149 bar @ 177°C) with PEEK seats; 3600 psi @ 150°F (248 bar @ 66°C) with PTFE seats; 350 psi @ 275°F (24,1 bar @ 135°C) with EPDM seats

Surface Finish:

- Wetted Internal surface finish: Mechanically polished, and electropolished to ASME BPE SF5, 20 Ra µin (0.5 Ra µm) as standard
- Exterior surface finish: Mechanically polished to 40 Ra µin (1.0 Ra µm) as standard
- Other finishes available upon request

Maximum Pressure Drop:

- Tube End and Tri-Clamp: 450 psi (31,0 bar)
- NPT: 3000 psi (207 bar)

Spring Ranges

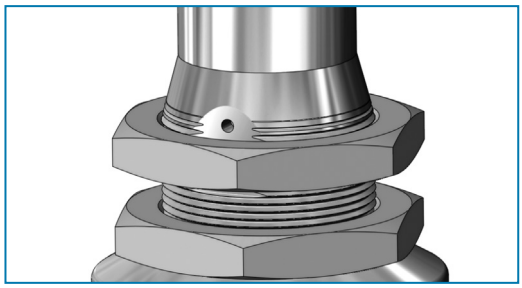
- 5 – 50 psi (0,3 – 3,4 bar)
- 25 – 100 psi (1,7 – 6,9 bar)
- 50 – 150 pis (3,4 – 10,3 bar)
- 25 – 250 psi (1,7 – 17 bar)
- 100 – 450 psi (7 – 30 bar)
- 200 – 750 psi (14 - 52 bar) - NPT only

Flow Capacities: Cv 0.012, Cv 0.03, Cv 0.08, Cv 0.20

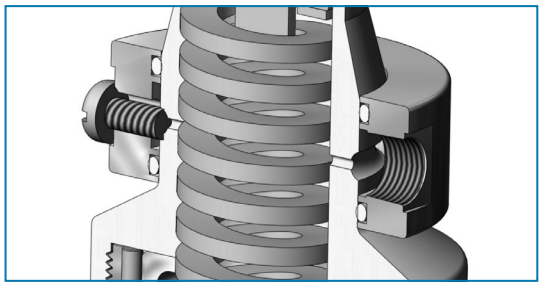
Options

- Panel Mounting
- Captured Vent
- Self Relieving - Available with PTFE seats

Options



Panel Mount Option



Captured Vent Option (1/8" NPT)

Option Definition

Captured Vent

The captured vent design is for maximum safety for the user when handling toxic or hazardous media. It features a 1/8" FNPT port located on the spring housing. The user can easily tube this vent to a safe location. This option can be incorporated into a self-relieving regulator that provides an additional port to permit the safe expulsion of hazardous media.

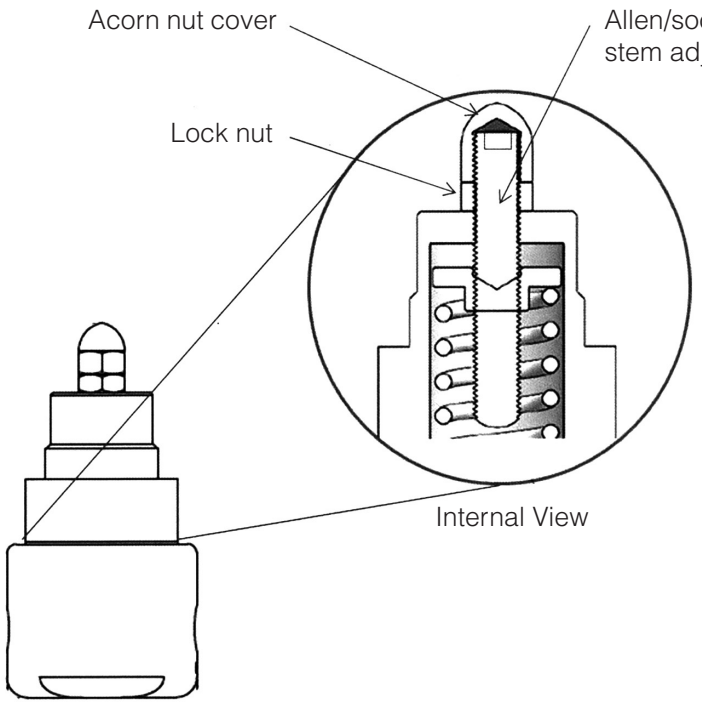
Panel Mount

The panel mount feature requires a panel cut out of 1-1/2", complete with a threaded spring housing, and a panel mount ring to secure the regulator.

*Self Relieving

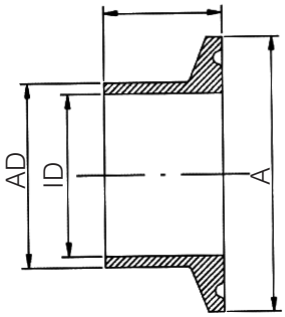
The self relieving option is used for internal venting of downstream pressure. From a practical standpoint, it allows for immediate reduction in pressure setpoints and automatically alleviates regulator lock up.

Anti-Tamper Option



1. Adjust stem position with Allen wrench
2. Tighten lock nut against bonnet while holding stem position
3. Replace and tighten acorn nut

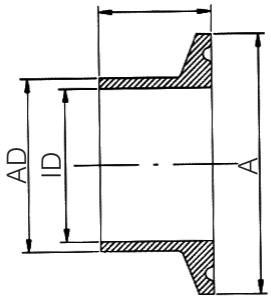
DIN & ISO Tri-Clamp Dimensions



DIN 32676 Row B (ISO 1127)

VALVE SIZE	A	AD	ID
DN15	50.5	21.3	18.1
DN15*	34.0	21.3	18.1
DN20	50.5	26.9	22.9

* with non-standard Tri-clamp face

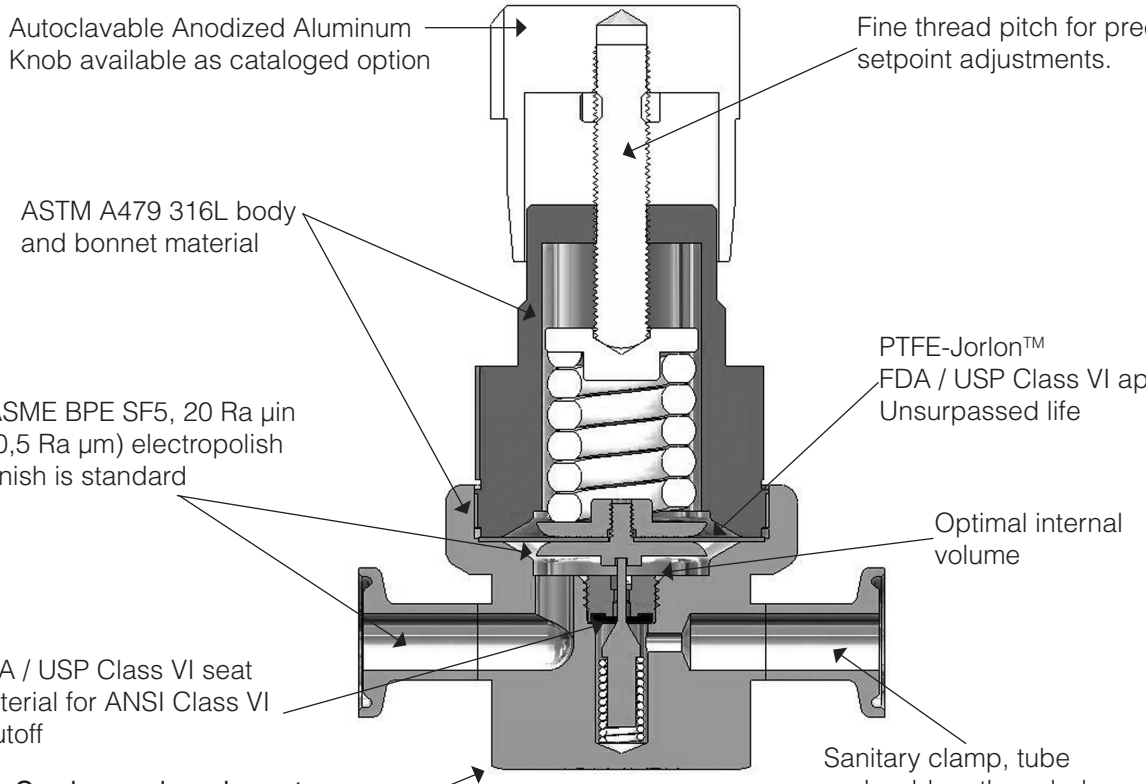


DIN 32676 Row A (DIN 11850)

VALVE SIZE	A	AD	ID
DN15	34.0	19.0	16.0
DN15*	50.5	19.0	16.0
DN20	34.0	23.0	20.0
DN20*	50.5	23.0	20.0

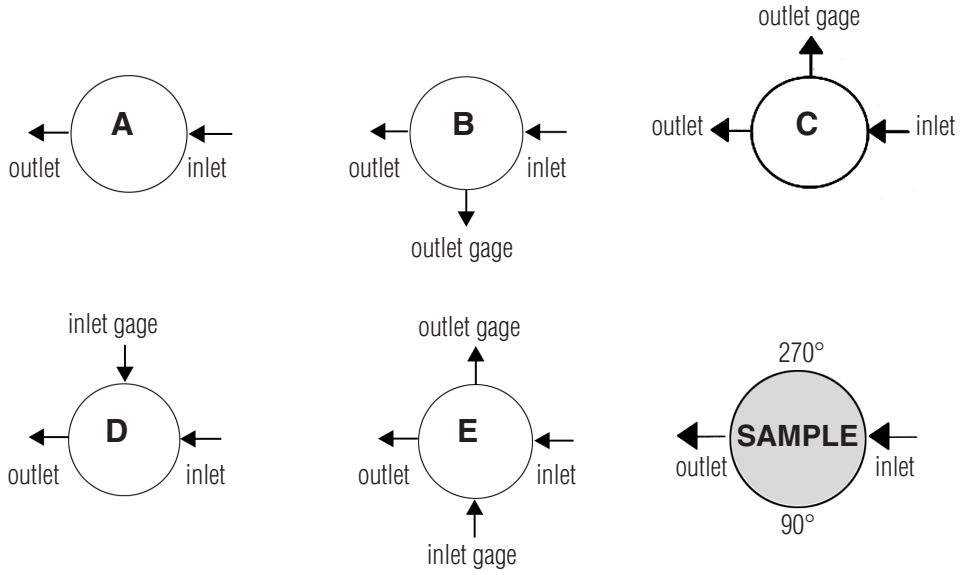
* with non-standard Tri-clamp face

Features & Benefits



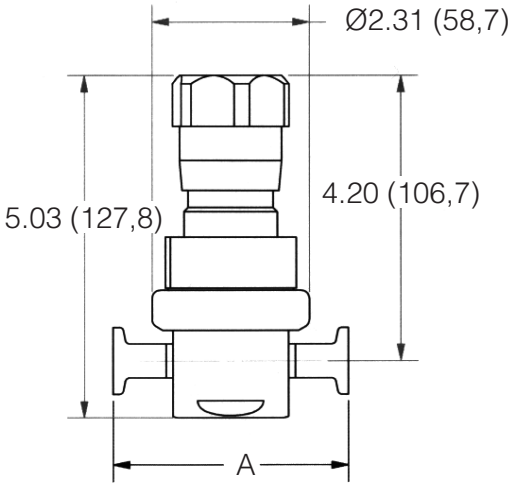
NOTE: Can be used on clean steam or non-cavitating liquids (the design is not drainable) with Steriflow engineering application approval.

Flow Configurations/ Gauge Ports



* Gage ports are 1/4" FNPT as standard. Consult factory for Tri-Clamp, VCR or other connections or porting options.

Dimensions

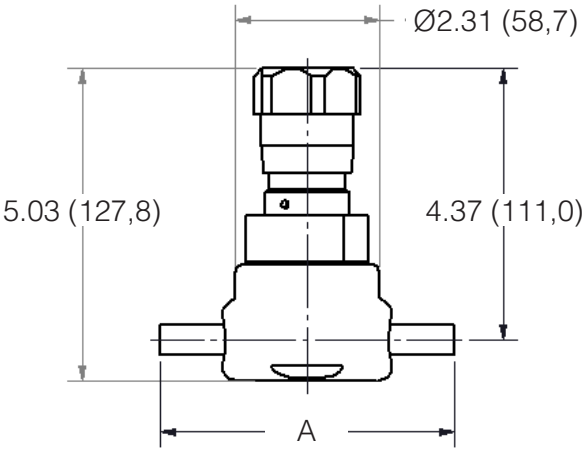


- JSRLF Series with Tri-Clamp Ends, Inches

VALVE SIZE	A	WEIGHT, LBS
1/2"	3.81	4.2
3/4"	3.81	4.2

- JSRLF Series with Tri-Clamp Ends, Metric

VALVE SIZE	A	WEIGHT, KG
DN15	96,8	1,9
DN20	96,8	1,9

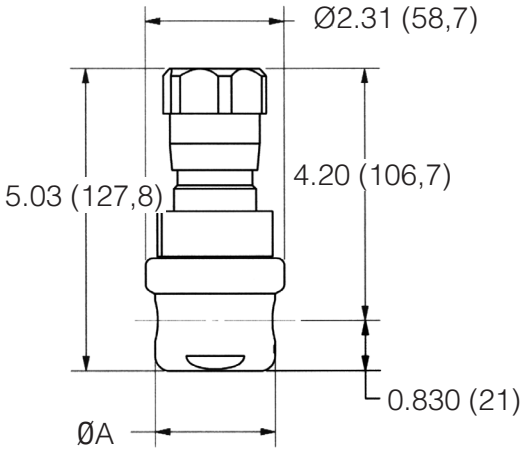


- JSRLF Series with Tube Ends, Inches

VALVE SIZE	A	WEIGHT, LBS
1/2"	3.81	4.2
3/4"	3.81	4.2

- JSRLF Series with Tube Ends, Metric

VALVE SIZE	A	WEIGHT, KG
DN15	96,8	1,9
DN20	96,8	1,9



- JSRLF Series with FNPT/SW Ends, Inches

VALVE SIZE	A	WEIGHT, LBS
1/4"	2.00	3.4
3/8"	2.00	3.4
1/2"	2.75	4.2

- JSRLF Series with FNPT/SW Ends, Metric

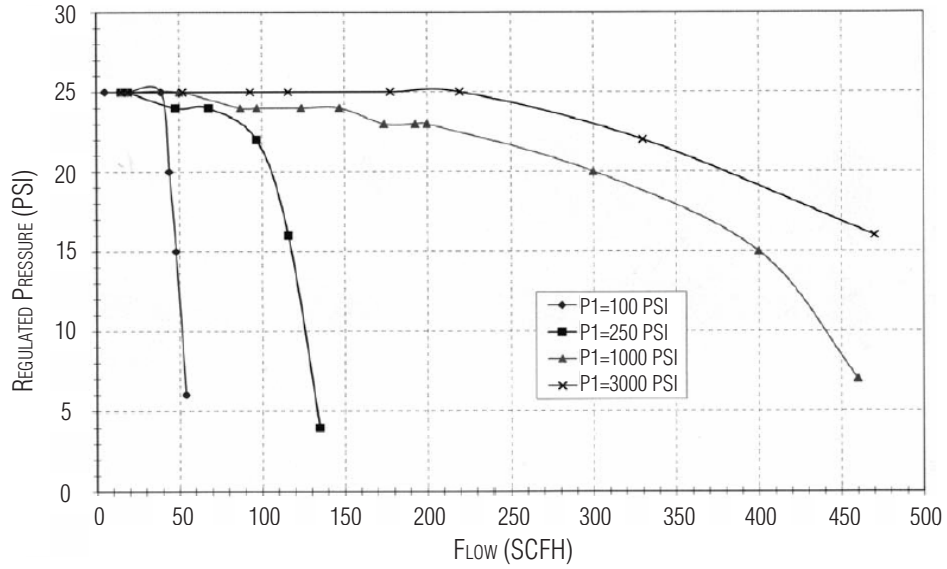
VALVE SIZE	A	WEIGHT, KG
DN8	50,8	1,5
DN10	50,8	1,5
DN15	69,9	1,9

Trim Flow Graphs

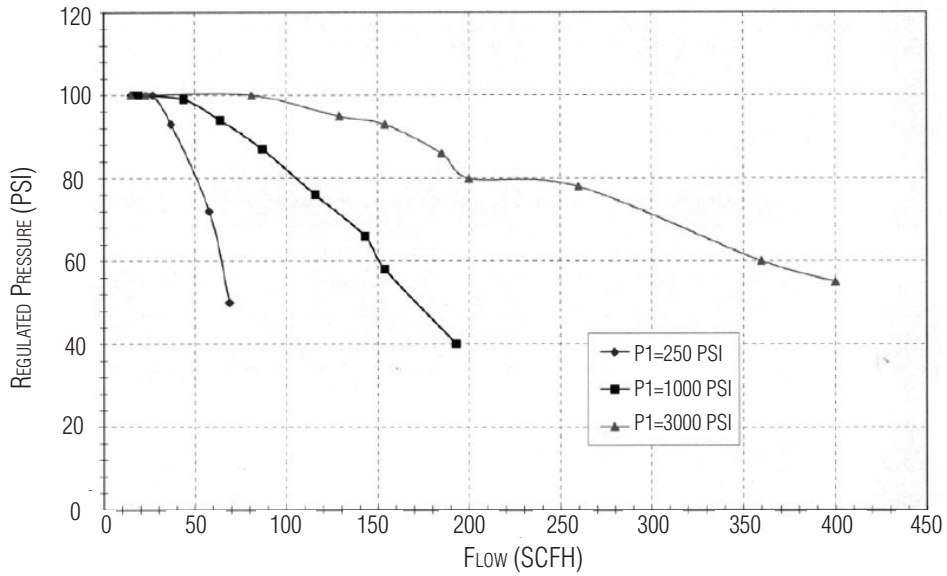
To select a valve with the proper Cv:

1. Convert pressure and flow units to those shown on the graphs below.
2. Select the graph below with a flow range (horizontal axis) that encompasses the minimum and maximum flows of your installation, and with an appropriate outlet regulated pressure (vertical axis). Also make sure that the application inlet pressure is covered by the graph (P1 legend box at bottom right of each chart). Please note maximum inlet pressure, pressure at temperature and differential pressure limitations on page 2.
3. Plot your desired set point on the graph you chose, at the flow rate you expect at that set point.
4. Pick the P1 inlet pressure curve in your graph (see P1 legend box) that is closest to your valve installation inlet pressure.
5. Draw a curve with the same slope parallel to that curve through your plotted set point. That curve approximates the flow of your valve under operating conditions.

- 0.012 Cv — 5 – 50 psi Spring Range

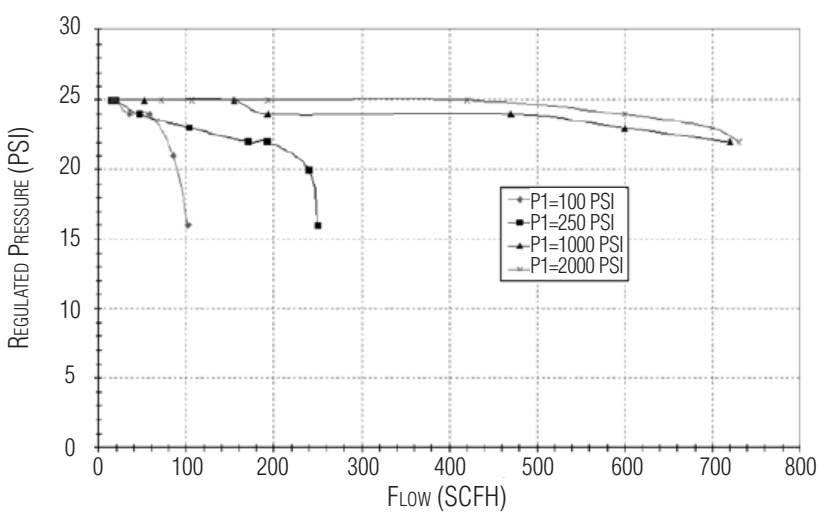


- 0.012 Cv — 50 – 150 psi Spring Range

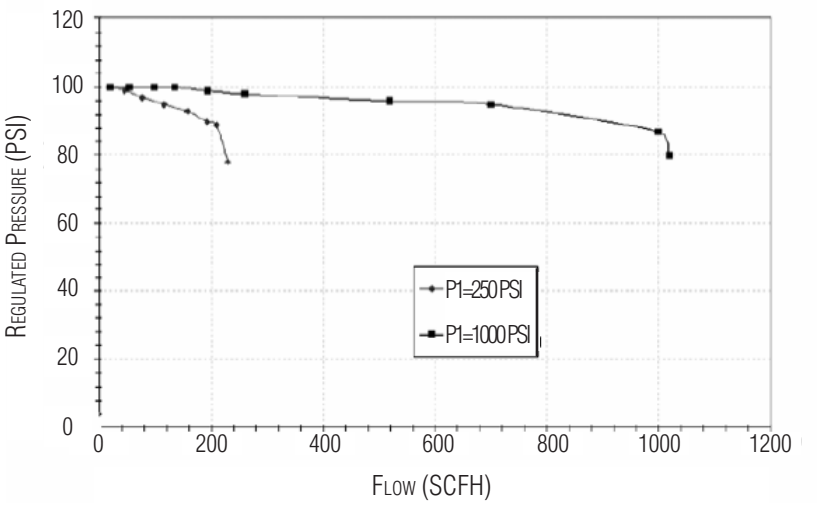


Trim Flow Graphs

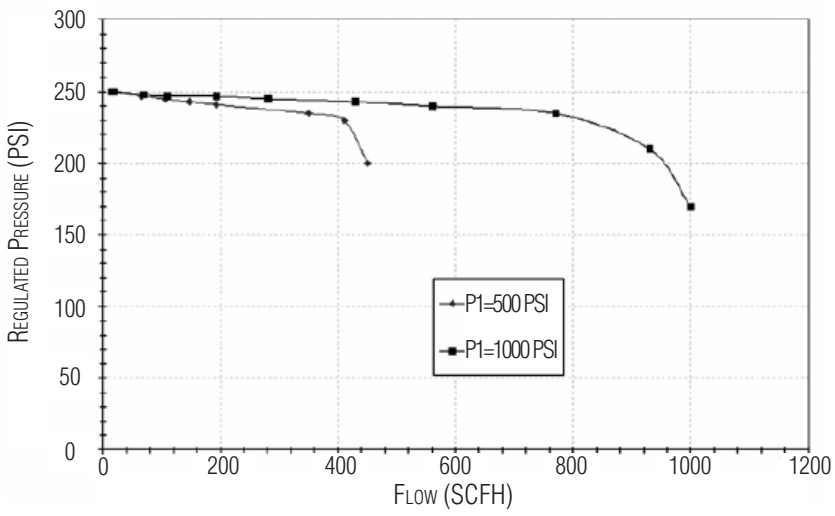
- 0.08 Cv — 5 – 50 psi Spring Range



- 0.08 Cv — 50 – 150 psi Spring Range

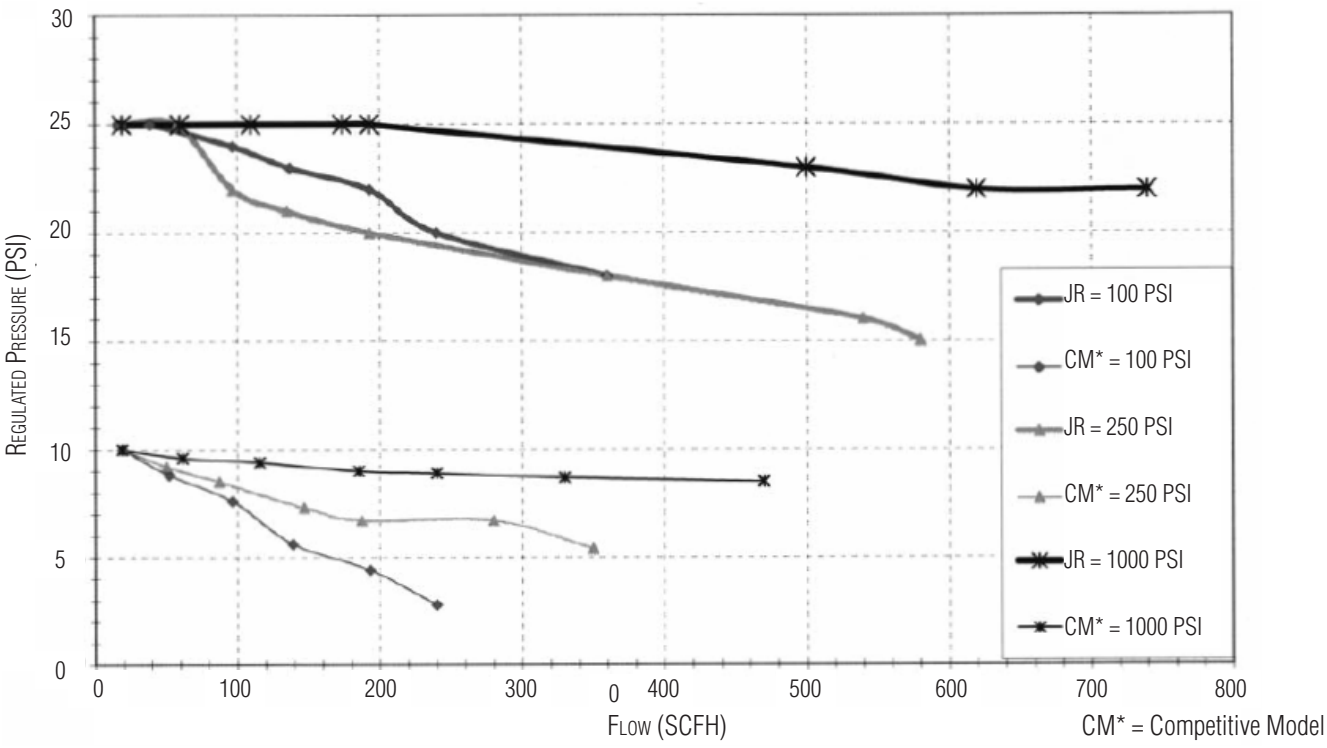


- 0.08 Cv — 100 – 475 psi Spring Range

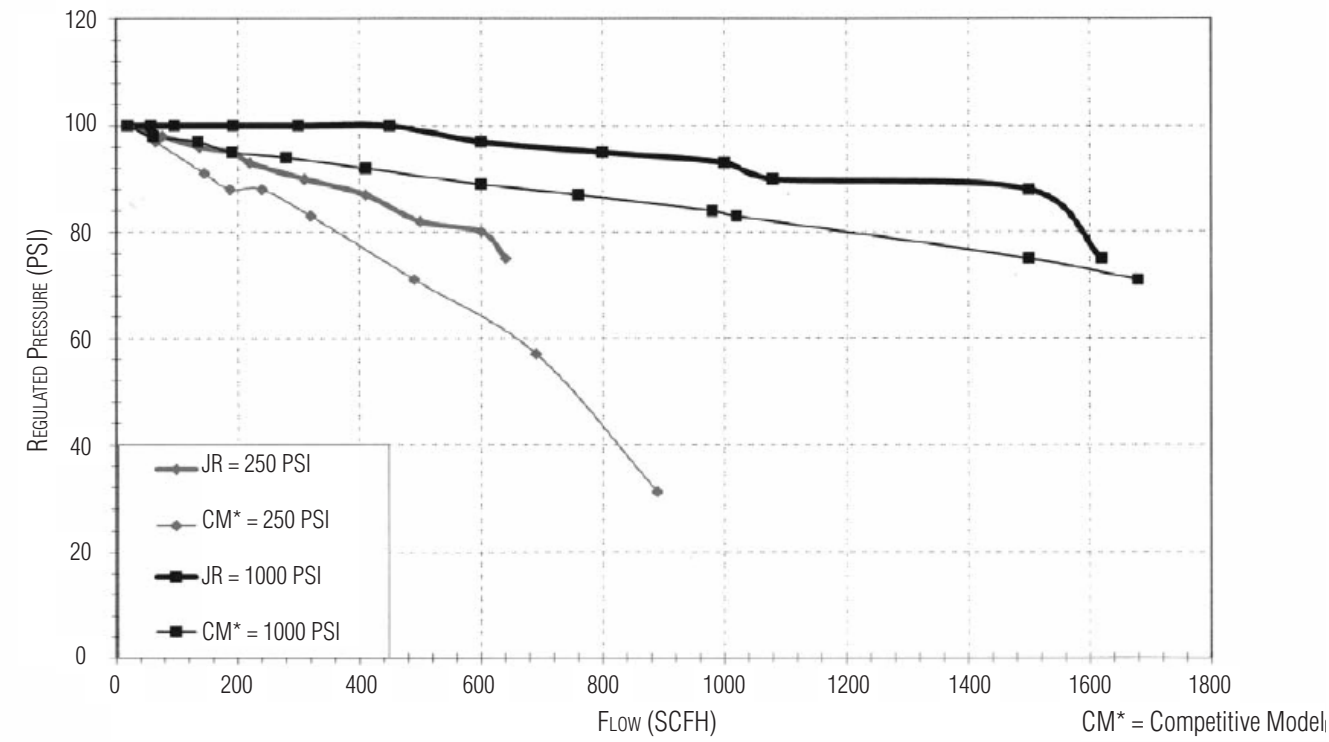


Trim Flow Graphs

- 0.2 Cv — 5 – 50 psi Spring Range



- 0.2 Cv — 50 – 150 psi Spring Range



JSRLF Ordering Schematic (see pg 10 for JSRLFE (EPDM Seat) Ordering Schematic)

Model		Size		Material	/	1 & 2	3 & 4	5 & 6	7 & 8	9 & 10	11 & 12	13 & 14	15	16	17
	—		—												

Model	
JSRLF	Low Flow Pressure Reducing Valve

Size	
025	1/4" (DN08)
038	3/8" (DN10)
050	1/2" (DN15)

Material	
6L	ASTM A479, 316L

1	Body Feature End Connection
ASME BPE Selections	
A	FNPT, 1/4"
B	FNPT, 3/8"
C	FNPT, 1/2"
T	ASME BPE Tri-Clamp, 1/2"
W	ASME BPE Tube Weld, 1/2"
ISO Selections	
H[4]	ISO Tube Weld, DN15
S[1]	ISO Tri-Clamp, DN15
V[1]	ISO w/ 34.0mm face T-Clamp, DN15
R[1]	ISO T-Clamp, DN20
DIN Selections	
D[2]	DIN Tri-Clamp, DN15
N[2]	DIN T-Clamp, DN15 w/50.5mm face
U[2]	DIN T-Clamp, DN20
X[2]	DIN T-Clamp, DN20 w/50.5mm face
M[3]	DIN Tube Weld, DN15
ZZ	Non-Standard

2	Body Feature Port Configuration*
A	Port "A"
B	Port "B"
C	Port "C"
D	Port "D"
E	Port "E"

* Std. Gauge Ports are 1/4" FNPT. Contact factory for availability of others

[1] Acc. to DIN 32676 Row B (ISO 1127). See dimensions, page 3
[2] Acc. to DIN 32676 Row A. See dimensions, page 3
[3] Acc. to DIN 11866, DIN 11850 Row A
[4] Acc. to DIN 11866 Row B

3 & 4	Trim
1S	Cv 0.012
2S	Cv 0.08
3S	Cv 0.2
4S	Cv 0.03
1R	Cv 0.012 Self-Relieving
2R	Cv 0.08 Self-Relieving
3R	Cv 0.2 Self-Relieving
4R	CV 0.03 Self-Relieving
ZZ	Non-Standard

5 & 6	Seat Material - FDA & USP Class VI		
T1	PTFE Cv 0.012	P2	PEEK Cv 0.08
T2	PTFE Cv 0.08	P3	PEEK Cv 0.2
T3	PTFE Cv 0.2	P4	PEEK Cv 0.03
T4	PTFE Cv 0.03	ZZ	Non-Standard
P1	PEEK Cv 0.012		

7 & 8	Range Spring / Outlet Pressure		
E1	5 - 50 psi	E5	100 - 450 psi
E2	25 - 100 psi	E6	200 - 750 psi (NPT only)
E3	50 - 150 psi		
E4	75 - 250 psi	ZZ	Non-Standard

9 & 10	Diaphragm Material
JL	Jorlon™ PTFE, FDA & USP Class VI
ZZ	Non-Standard

11 & 12	Actuator
SK	Standard Actuator
AK	Autoclavable Anodized Aluminum Knob available as cataloged option
CV	Captured Vent
PM	Panel Mount
TP	Anti-tamper feature (See illustration page 3)
ZZ	Non-Standard

13 & 14	Inlet Gauge*		
AA	0 - 30 psi / bar (Dual)	JJ	0 - 1000 psi/bar (Dual) NPT only
BB	0 - 60 psig / bar (Dual)	KK	0 - 2000 psi/bar (Dual) NPT only
CC	0 - 100 psig / bar (Dual)	LL	0 - 3000 psi/bar (Dual) NPT only
DD	0 - 160 psig / bar (Dual)	MM	0 - 5000 psi/bar (Dual) NPT only
EE	0 - 200 psig / bar (Dual)	NN	No Gauge - if gauge ported body option selected
FF	0 - 300 psig / bar (Dual)	00	No Gauge - if Port "A" Body Feature chosen
GG	0 - 400 psig / bar (Dual)	ZZ	Non-Standard
HH	0 - 600 psig/bar (Dual) NPT only		

* Customer assumes all responsibility for possible damage or injury if selected gauge span does not fully cover range spring / outlet pressure option

15	Outlet Gauge*
A	0 - 30 psig
B	0 - 60 psig / bar (Dual)
C	0 - 100 psig / bar (Dual)
D	0 - 160 psig / bar (Dual)
E	0 - 200 psig / bar (Dual)
F	0 - 300 psig / bar (Dual)
G	0 - 400 psig / bar (Dual)
H	0 - 600 psig / bar (Dual) NPT only
J	0 - 1000 psi / bar (Dual) NPT only
N	No Gauge - if gauge ported body option selected
0	No Gauge - if Port "A" Body Feature chosen
Z	Non-Standard

* Customer assumes all responsibility for possible damage or injury if selected gauge span does not fully cover range spring / outlet pressure option

16	SEP Compliance
G	SEP Compliant
Ø	None
Z	Non-Standard

17	Accessories
S	Clean For Oil Free
X	Clean For Oxygen
J	Clean for Oxygen, Assemble Dry*[1]
A	EN10204 3.1 Cert for Wetted Parts
Ø	None
Z	Non-Standard

*Procedure complies with ASTM G-93 2011 and CGA G-4.1-2009

[1]Use of Oxygen safe lubricant (Krytox™ for example) can affect gas line particulate testing. Assembling all wetted components dry (without lubricant) removes that effect, however it may increase the difficulty in disassembly/reassembly of valve seat components during valve maintenance. Note that we will use O2 safe lubricant on non-wetted threaded components.

JSRLFE (EDPM Seat) Ordering Schematic

Model		Size		Material	/	1 & 2	3 & 4	5 & 6	7 & 8	9 & 10	11 & 12	13 & 14	15	16	17
	—		—												

Model	
JSRLFE	Low Flow Pressure Reducing Valve (EDPM Seat)

Size	
025	1/4" (DN08)
038	3/8" (DN10)
050	1/2" (DN15)

Material	
6L	ASTM A479, 316L

1	Body Feature End Connection
ASME BPE Selections	
A	FNPT, 1/4"
B	FNPT, 3/8"
C	FNPT, 1/2"
T	ASME BPE Tri-Clamp, 1/2"
W	ASME BPE Tube Weld, 1/2"
ISO Selections	
H[4]	ISO Tube Weld, DN15
S[1]	ISO Tri-Clamp, DN15
V[1]	ISO w/ 34.0mm face T-Clamp, DN15
R[1]	ISO T-Clamp, DN20
DIN Selections	
D[2]	DIN Tri-Clamp, DN15
N[2]	DIN T-Clamp, DN15 w/50.5mm face
U[2]	DIN T-Clamp, DN20
X[2]	DIN T-Clamp, DN20 w/50.5mm face
M[3]	DIN Tube Weld, DN15
ZZ	Non-Standard

2	Body Feature Port Configuration*
A	Port "A"
B	Port "B"
C	Port "C"
D	Port "D"
E	Port "E"

* Std. Gauge Ports are 1/4" FNPT. Contact factory for availability of others

[1] Acc. to DIN 32676 Row B (ISO 1127). See dimensions, page 3
[2] Acc. to DIN 32676 Row A. See dimensions, page 3
[3] Acc. to DIN 11866, DIN 11850 Row A
[4] Acc. to DIN 11866 Row B

3 & 4	Trim
1S	Cv 0.012
2S	Cv 0.08
3S	Cv 0.2
4S	Cv 0.03
1R	Cv 0.012 Self-Relieving, PTFE
2R	Cv 0.08 Self-Relieving, PTFE
3R	Cv 0.2 Self-Relieving, PTFE
4R	CV 0.03 Self-Relieving, PTFE
ZZ	Non-Standard

5 & 6	Seat Material
D1	EPDM Cv 0.012
D2	EPDM CV 0.08
D3	EPDM C 0.20
D4	EPDM CV 0.03
ZZ	Non-Standard

7 & 8	Range Spring / Outlet Pressure
E1	5 - 50 psi
E2	25 - 100 psi
E3	50 - 150 psi
E4	75 - 250 psi
E5	100 - 450 psi
ZZ	Non-Standard

9 & 10	Diaphragm Material
JL	Jorlon™ PTFE, FDA & USP Class VI
ZZ	Non-Standard

11 & 12	Actuator
	Ranges E1 thru E5
SK	Standard Actuator
CV	Captured Vent
PM	Panel Mount
TP	Anti-tamper feature (See illustration page 3)
ZZ	Non-Standard

13 & 14	Inlet Gauge*
AA	0 - 30 psi / bar (Dual)
BB	0 - 60 psig / bar (Dual)
CC	0 - 100 psig / bar (Dual)
DD	0 - 160 psig / bar (Dual)
EE	0 - 200 psig / bar (Dual)
FF	0 - 300 psig / bar (Dual)
GG	0 - 400 psig / bar (Dual)
NN	No Gauge - if gauge ported body option selected
00	No Gauge - if Port "A" Body Feature chosen
ZZ	Non-Standard

* Customer assumes all responsibility for possible damage or injury if selected gauge span does not fully cover range spring / outlet pressure option

15	Outlet Gauge*
A	0 - 30 psig
B	0 - 60 psig / bar (Dual)
C	0 - 100 psig / bar (Dual)
D	0 - 160 psig / bar (Dual)
E	0 - 200 psig / bar (Dual)
F	0 - 300 psig / bar (Dual)
G	0 - 400 psig / bar (Dual)
N	No Gauge - if gauge ported body option selected
00	No Gauge - if Port "A" Body Feature chosen
Z	Non-Standard

* Customer assumes all responsibility for possible damage or injury if selected gauge span does not fully cover range spring / outlet pressure option

16	SEP Compliance
G	SEP Compliant
Ø	None
Z	Non-Standard

17	Accessories
S	Clean For Oil Free
X	Clean For Oxygen*
J	Clean for Oxygen, Assemble Dry*[1]
A	EN10204 3.1 Cert for Wetted Parts
Ø	None
Z	Non-Standard

*Procedure complies with ASTM G-93 2011 and CGA G-4.1-2009

[1]Use of Oxygen safe lubricant (Krytox™ for example) can affect gas line particulate testing. Assembling all wetted components dry (without lubricant) removes that effect, however it may increase the difficulty in disassembly/reassembly of valve seat components during valve maintenance. Note that we will use O2 safe lubricant on non-wetted threaded components.

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