

# JSRFL Series

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

The Steriflow JSRFL 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 ASTM A479 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

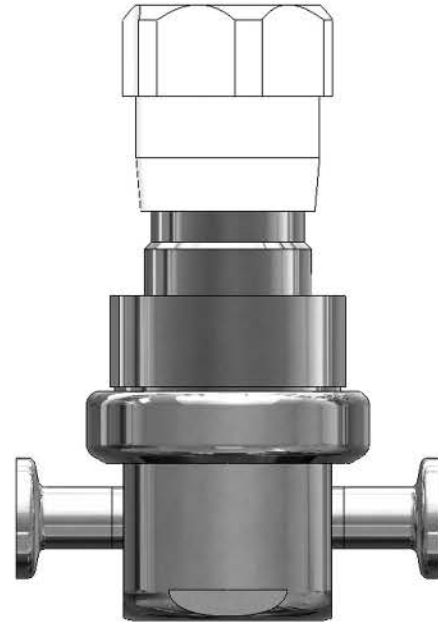
The following documentation is shipped at no charge:

- 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.

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



### 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<sub>2</sub>, CO<sub>2</sub>, O<sub>2</sub>, 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.



## 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, and electropolished 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**

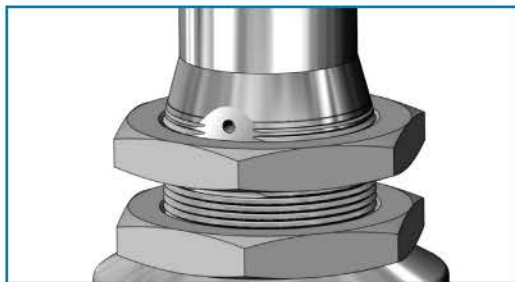
- 5 – 50 psi (0,3 – 3,4 bar)
- 25 – 100 psi (1,7 – 6,9 bar)
- 50 – 150 psi (3,4 – 10,3 bar)
- 25 – 250 psi (1,7 – 17 bar)
- 100 – 450 psi (7 – 30 bar)
- 200 – 750 psi (14 - 52 bar) - NPT only

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

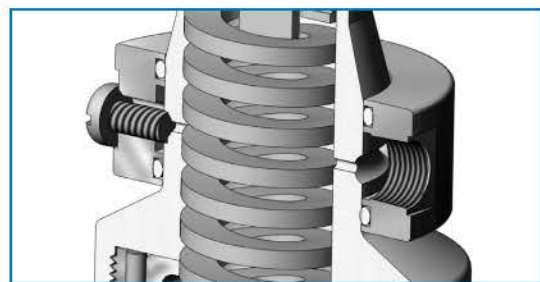
**Options**

- 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.

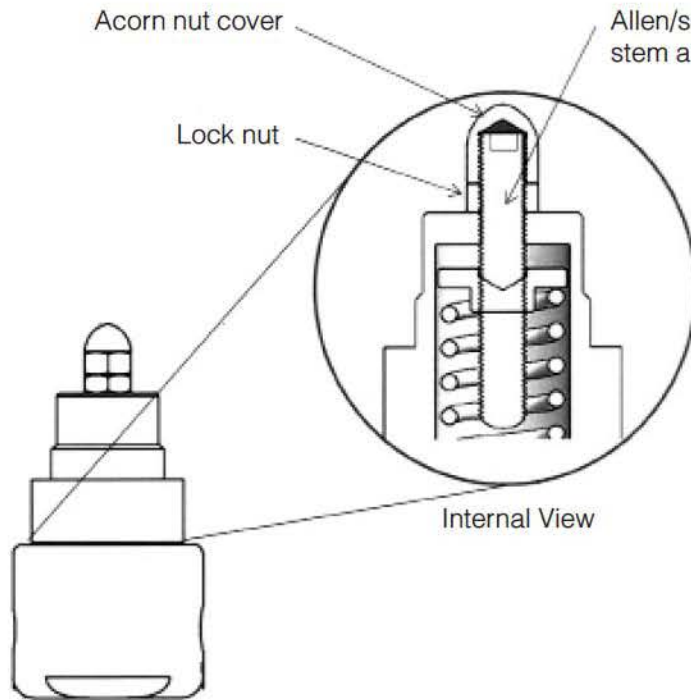
### Panel Mount

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

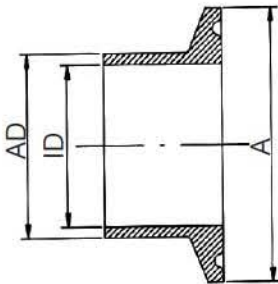
The self relieving option is used for internal venting of downstream pressure. From a practical standpoint, it allows for immediate reduction in pressure setpoints and automatically alleviates regulator lock up.

**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

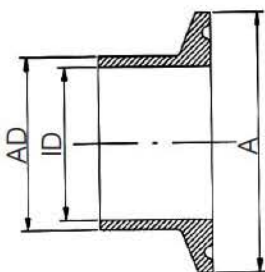
**DIN & ISO TRI-CLAMP DIMENSIONS**



**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



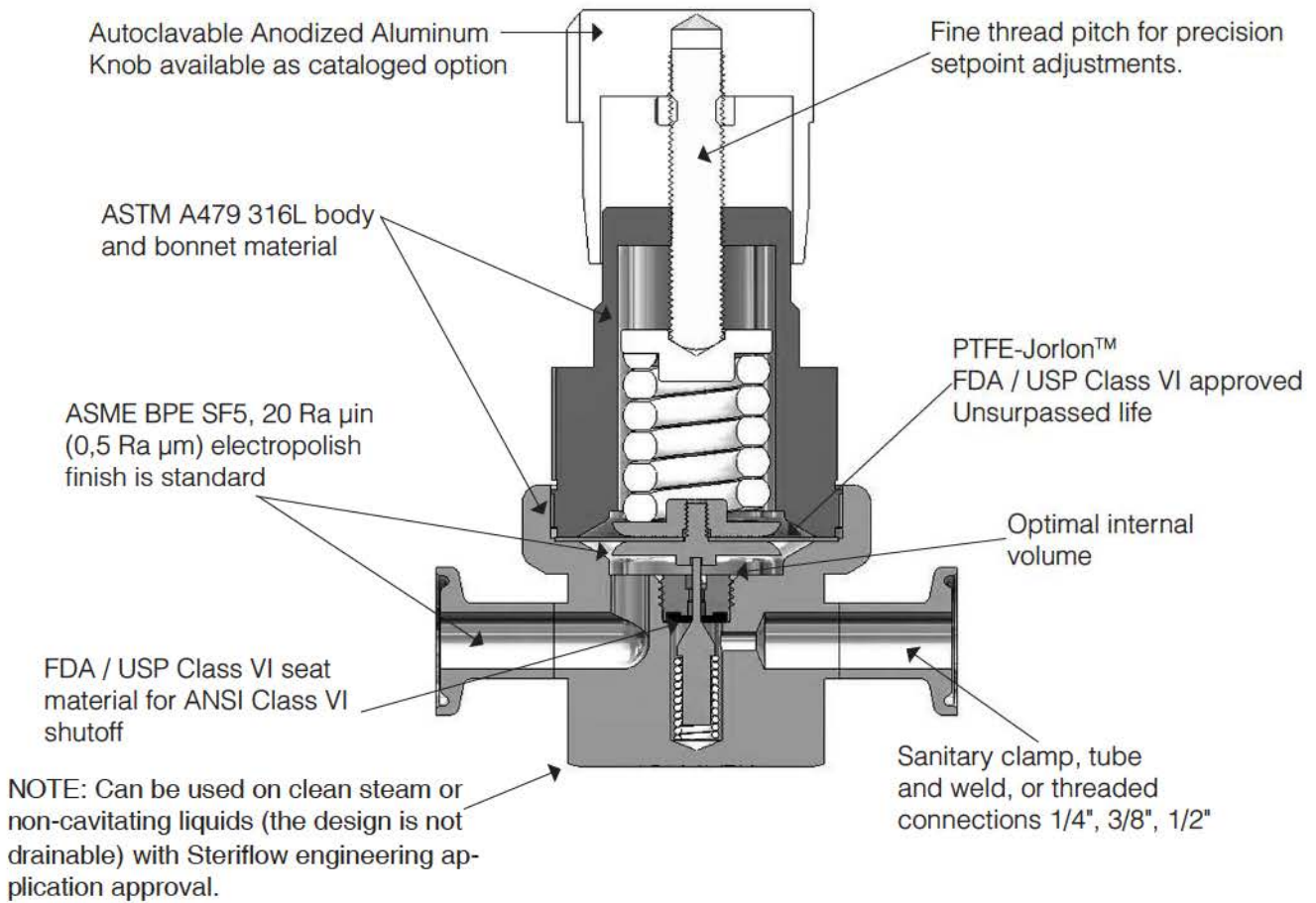
**DIN 32676 Row A (DIN 11850)**

| 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 |

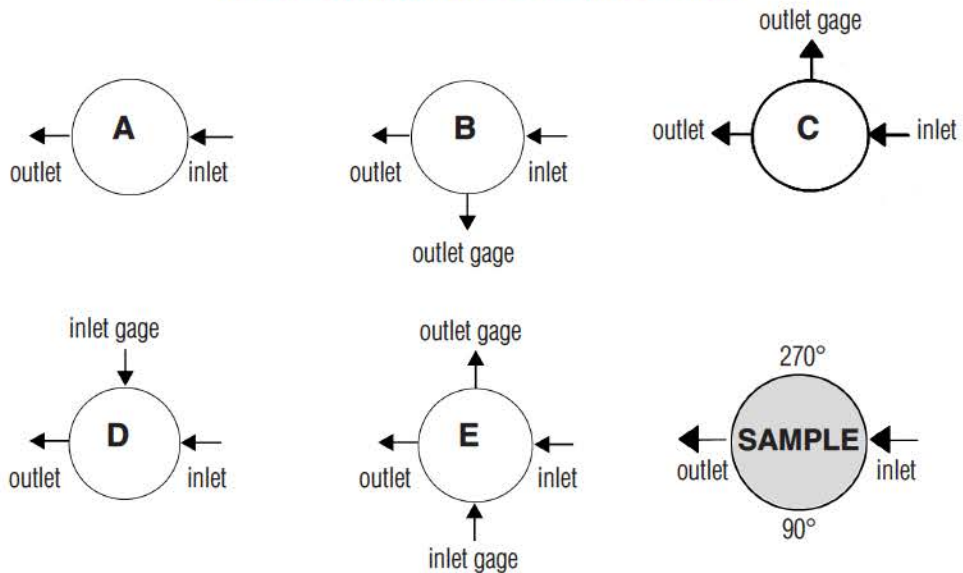
\* with non-standard Tri-clamp face



**FEATURES & BENEFITS**

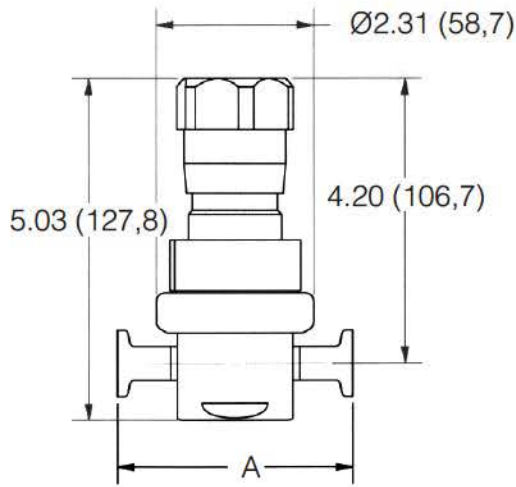


**FLOW CONFIGURATIONS/ GAUGE PORTS**



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

**DIMENSIONS**

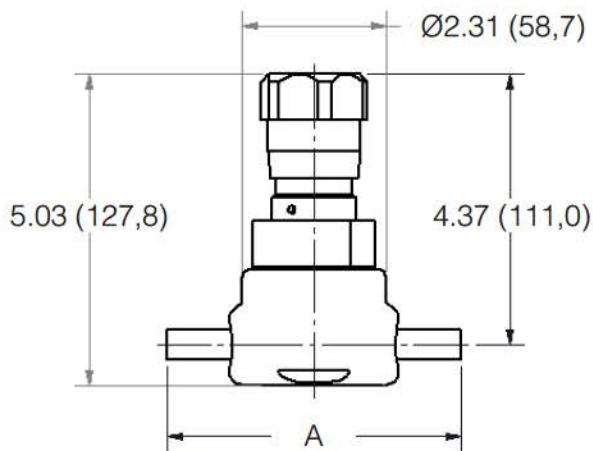


• JSRLF Series with Tri-Clamp Ends, Inches

| 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        |

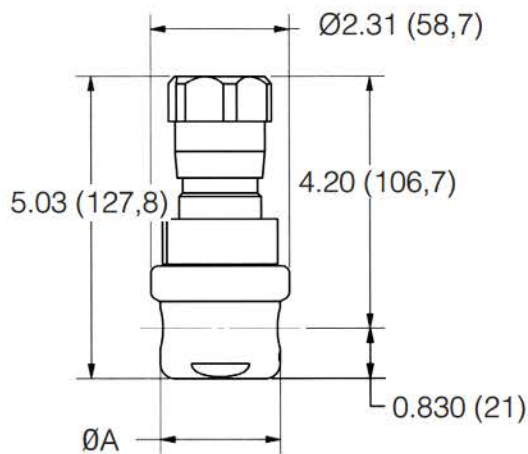


• JSRLF Series with Tube Ends, Inches

| 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

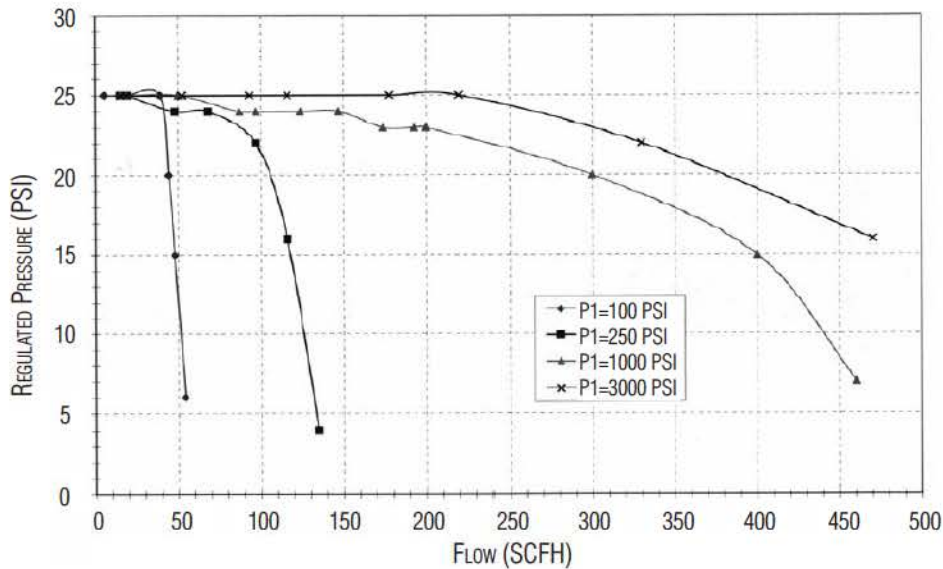
| VALVE SIZE | A    | WEIGHT, KG |
|------------|------|------------|
| DN8        | 50,8 | 1,5        |
| DN10       | 50,8 | 1,5        |
| DN15       | 69,9 | 1,9        |

### TRIM FLOW GRAPHS

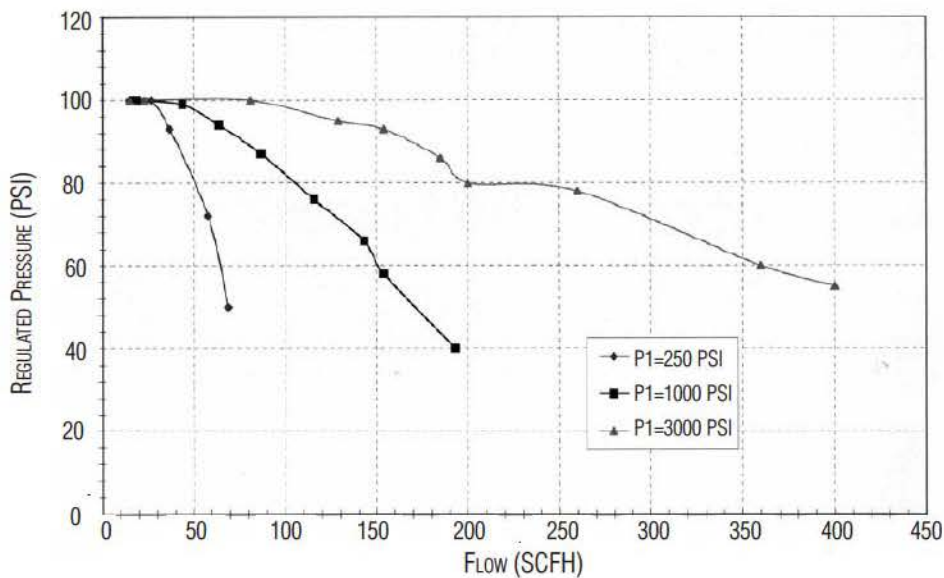
To select a valve with the proper Cv:

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

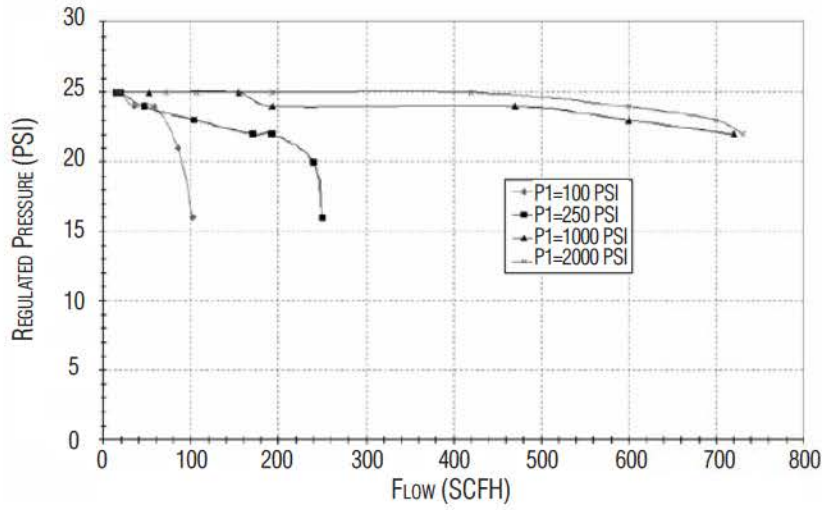


• 0.012 Cv — 50 – 150 psi Spring Range

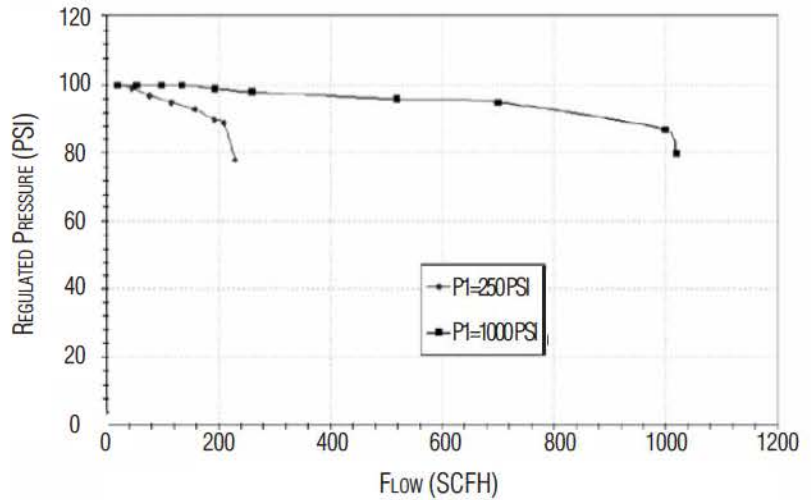


TRIM FLOW GRAPHS

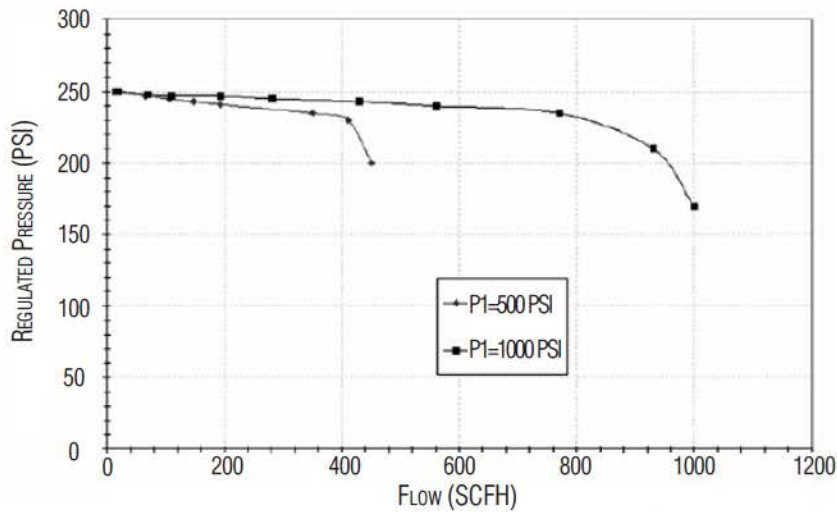
- 0.08 Cv — 5 – 50 psi Spring Range



- 0.08 Cv — 50 – 150 psi Spring Range



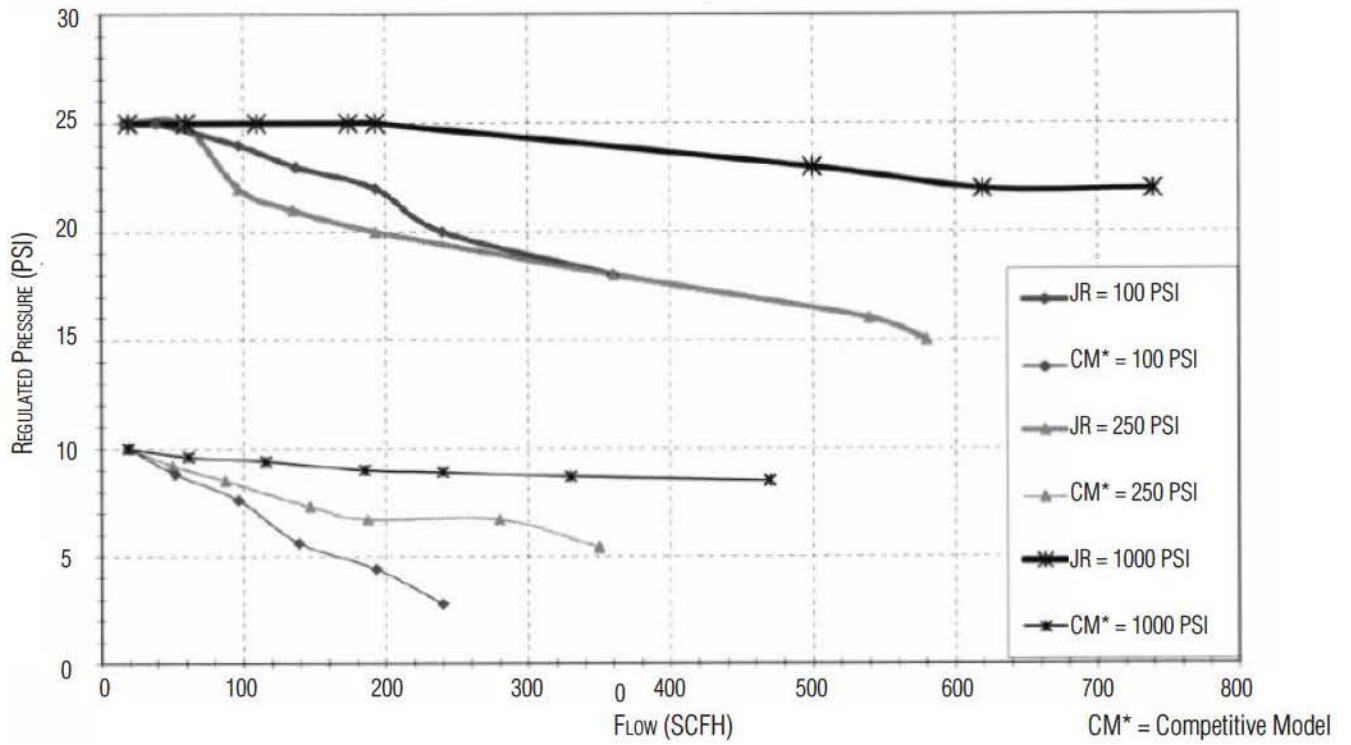
- 0.08 Cv — 100 – 475 psi Spring Range



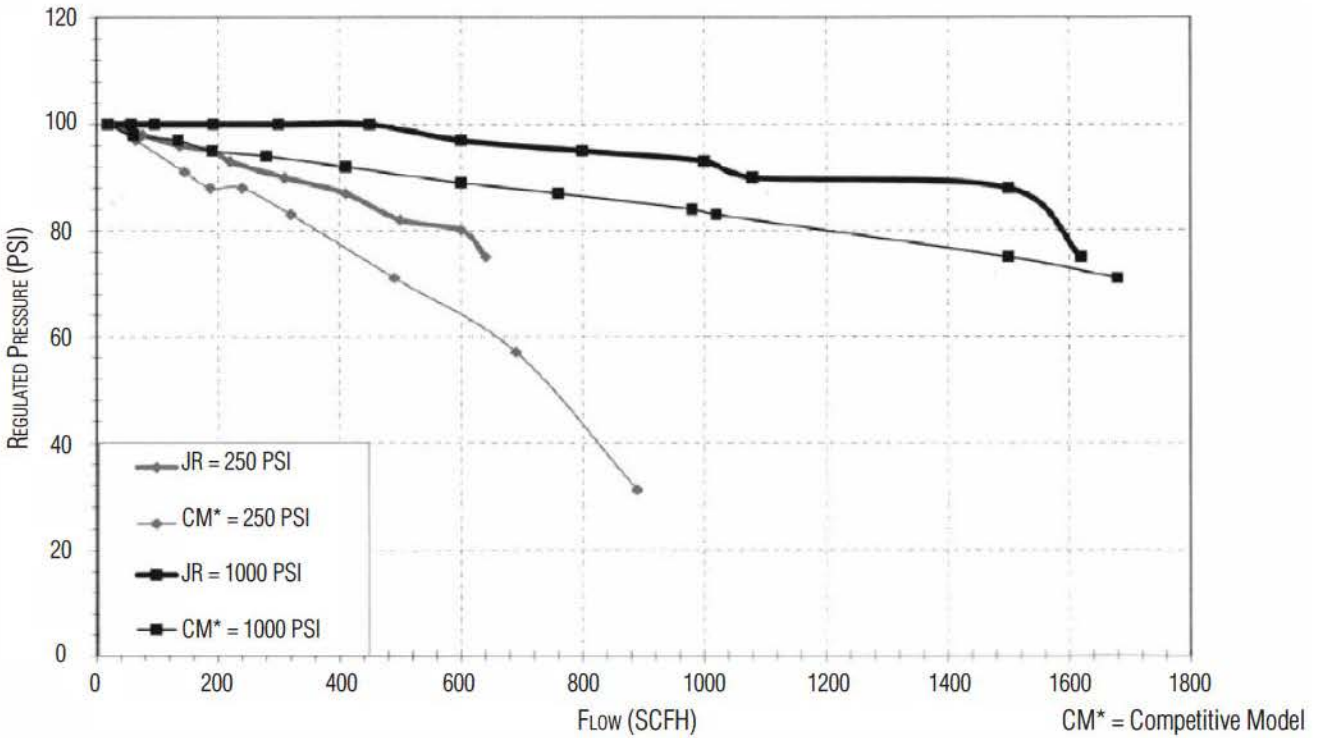


TRIM FLOW GRAPHS

- 0.2 Cv — 5 – 50 psi Spring Range



- 0.2 Cv — 50 – 150 psi Spring Range





JSRLF SERIES LOW FLOW PRESSURE REDUCING VALVE

JSRLF ORDERING SCHEMATIC (SEE PG 10 FOR JSRLF (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 & 2          | Body Feature                     |                     |          |
|----------------|----------------------------------|---------------------|----------|
|                | End Connection                   | Port Configuration* |          |
| A              | FNPT, 1/4"                       | A                   | Port "A" |
| B              | FNPT, 3/8"                       | B                   | Port "B" |
| C              | FNPT, 1/2"                       | C                   | Port "C" |
| T              | ASME BPE Tri-Clamp, 1/2"         | D                   | Port "D" |
| W              | ASME BPE Tube Weld, 1/2"         | E                   | Port "E" |
| S <sup>1</sup> | ISO Tri-Clamp, DN15              |                     |          |
| V <sup>1</sup> | ISO w/ 34.0mm face T-Clamp, DN15 |                     |          |
| R <sup>1</sup> | ISO T-Clamp, DN20                |                     |          |
| D <sup>2</sup> | DIN Tri-Clamp, DN15              |                     |          |
| N <sup>2</sup> | DIN T-Clamp, DN15 w/50.5mm face  |                     |          |
| U <sup>2</sup> | DIN T-Clamp, DN20                |                     |          |
| X <sup>2</sup> | DIN T-Clamp, DN20 w/50.5mm face  |                     |          |
| M <sup>3</sup> | DIN Tube Weld, DN15              |                     |          |
| H <sup>4</sup> | ISO Tube Weld, DN15              |                     |          |
| ZZ             | Non-Standard                     |                     |          |

<sup>1</sup> Acc. to DIN 32676 Row B (ISO 1127). See dimensions, page 3

<sup>2</sup> Acc. to DIN 32676 Row A. See dimensions, page 3

<sup>3</sup> Acc. to DIN 11866, DIN 11850 Row A

<sup>4</sup> Acc. to DIN 11866 Row B

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

| 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)   | HH | 0 - 600 psig/bar (Dual) NPT only |
| BB      | 0 - 60 psig / bar (Dual)  | JJ | 0 - 1000 psi/bar (Dual) NPT only |
| CC      | 0 - 100 psig / bar (Dual) | KK | 0 - 2000 psi/bar (Dual) NPT only |
| DD      | 0 - 160 psig / bar (Dual) | LL | 0 - 3000 psi/bar (Dual) NPT only |
| EE      | 0 - 200 psig / bar (Dual) | MM | 0 - 5000 psi/bar (Dual) NPT only |
| FF      | 0 - 300 psig / bar (Dual) | NN | None                             |
| GG      | 0 - 400 psig / bar (Dual) | ZZ | Non-Standard                     |

| 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  | None                               |
| Z  | Non-Standard                       |

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

| 17 | Accessories        |
|----|--------------------|
| S  | Clean For Oil Free |
| X  | Clean For Oxygen   |
| Ø  | None               |
| Z  | Non-Standard       |



**JSRLE (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 |  |
|-------|--|
| JSRLE | 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 & 2          | Body Feature                     |                     |
|----------------|----------------------------------|---------------------|
|                | End Connection                   | Port Configuration* |
| A              | FNPT, 1/4"                       | A Port "A"          |
| B              | FNPT, 3/8"                       | B Port "B"          |
| C              | FNPT, 1/2"                       | C Port "C"          |
| T              | ASME BPE Tri-Clamp, 1/2"         | D Port "D"          |
| W              | ASME BPE Tube Weld, 1/2"         | E Port "E"          |
| S <sup>1</sup> | ISO Tri-Clamp, DN15              |                     |
| V <sup>1</sup> | ISO w/ 34.0mm face T-Clamp, DN15 |                     |
| R <sup>1</sup> | ISO T-Clamp, DN20                |                     |
| D <sup>2</sup> | DIN Tri-Clamp, DN15              |                     |
| N <sup>2</sup> | DIN T-Clamp, DN15 w/50.5mm face  |                     |
| U <sup>2</sup> | DIN T-Clamp, DN20                |                     |
| X <sup>2</sup> | DIN T-Clamp, DN20 w/50.5mm face  |                     |
| M <sup>3</sup> | DIN Tube Weld, DN15              |                     |
| H <sup>4</sup> | ISO Tube Weld, DN15              |                     |
| ZZ             | Non-Standard                     |                     |

<sup>1</sup> Acc. to DIN 32676 Row B (ISO 1127). See dimensions, page 3

<sup>2</sup> Acc. to DIN 32676 Row A. See dimensions, page 3

<sup>3</sup> Acc. to DIN 11866, DIN 11850 Row A

<sup>4</sup> Acc. to DIN 11866 Row B

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

| 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       |
| 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      | None                      |
| ZZ      | Non-Standard              |

| 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  | None                      |
| Z  | Non-Standard              |

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

| 17 | Accessories        |
|----|--------------------|
| S  | Clean For Oil Free |
| X  | Clean For Oxygen*  |
| Ø  | None               |
| Z  | Non-Standard       |

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