

JSRFLP Series

Pressure Reducing Valves for Low Flow and Low Pressure Biopharmaceutical and Parenteral process Gas

JSRFLP is a high purity low flow, regulator designed and built specifically for very low pressure hygienic, ASME BPE gas applications.

The JSRFLP has been designed specifically for very low pressure clean gas regulation in Stainless and Single Use Disposable applications. Whether it's precise regulation for sparging, blanketing, motive force, or SUD bag inflation, the JSRFLP was built for the job!

The durable valve body and metal trim components are machined from ASTM A479 316L SST barstock and finished to ASME BPE SF5, 20Ra micro-inch, (0.5 Ra micrometer) electropolished as standard.

The valve is outfitted with a sensitive PTFE Jorlon diaphragm and Teflon or PEEK, seats and seals that are all FDA approved, USP Class VI compliant materials. These materials of construction enable JSRFLP to withstand the rigors of an autoclave if required.

FEATURES

- Stable outlet pressure setpoints at very low pressure
- Very low set point offset (droop) especially at higher inlet pressures
- Top entry design facilitates in-line cleaning and maintenance
- Barstock construction guarantees material integrity and quality surface finish
- Four Cv's from 0.01 to 0.2 guarantee a valve that will fit your specific 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: Certificate of Compliance for:
 - Material, including MTR's
 - Surface Finish
 - FDA/USP Class VI
- Traceability:

Each Unicert includes individual valve serial numbers, heat numbers and attached MTR's directly traceable to the valve serial number and heat numbers imprinted on all wetted metallic components.



SURFACE FINISH

- ASME BPE SF5 (20 Ra μin (0.5 Ra μm), electropolished) — standard for all external and wetted metal parts
- ASME BPE SF1 (20 Ra μin) mechanical finish, non-electropolished and other finishes available
- O₂ cleaning — optional

APPLICATIONS

Ideal for low pressure regulation of gases used in bio-pharmaceutical R&D and production facilities. Designed specifically for very low pressure control in traditional Stainless Steel and Single Use Disposable installations such as: Gas overlay or motive force movement, pressure filling, Lyophilization, sparging, or SUD bag inflation.

- Clean Filter Air
- Nitrogen
- Carbon Dioxide
- Argon
- Oxygen
- Custom purge or blanket gas

SPECIFICATIONS

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

End Connections: NPT all sizes, Tri-Clamp and Tube Weld End 1/2"(DN15) only

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

Body and Trim 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: 150 psig (10,3 bar)
- NPT: 150 psig (10,3 bar)

Pressure at Maximum Temperature:

- Tube End and Tri-Clamp: 150 psi @ 350°F (10,3 bar @ 177°C) with PEEK seats; 150 psi @ 150°F (10,3 bar @ 66°C) with PTFE seats
- NPT: 150 psi @ 350°F (10,3 bar @ 177°C) with PEEK seats; 150 psi @ 150°F (10,3 bar @ 66°C) with PTFE seats

Surface Finish:

- ASME BPE SF5, 20 Ra, µin (0,5 Ra, µm) electropolish standard
- ASME BPE SF1, 20 Ra, µin, (0,5 Ra µm), non-EP is optional, as are other finishes

Maximum Pressure Drop:

- Tube End and Tri-Clamp: 150 psi (10,3 bar)
- NPT: 150 psi (10,3 bar)

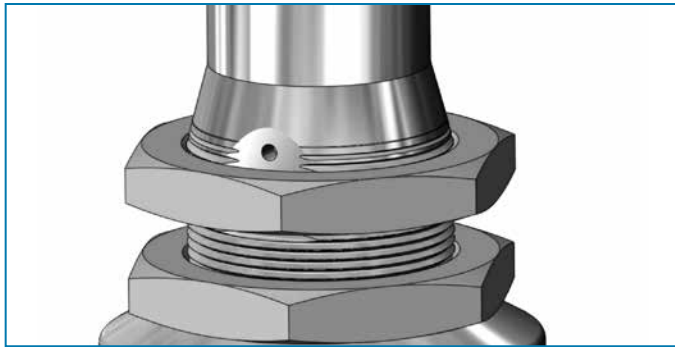
Spring Ranges: 1 – 75 psi (0,07 – 5,2 bar)

Flow Capacities: Cv 0.012, Cv 0.03, Cv 0.08, Cv 0.20 (Kv 0,010, Kv 0,026, Kv 0,069, Kv 0,173)

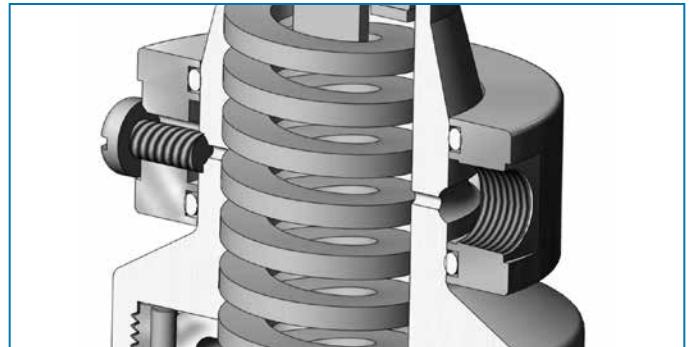
Options

- Oxygen cleaning and certification
- Panel Mounting
- Captured Vent
- Self Relieving
- Gauge Ports, Pressure Gauger

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.

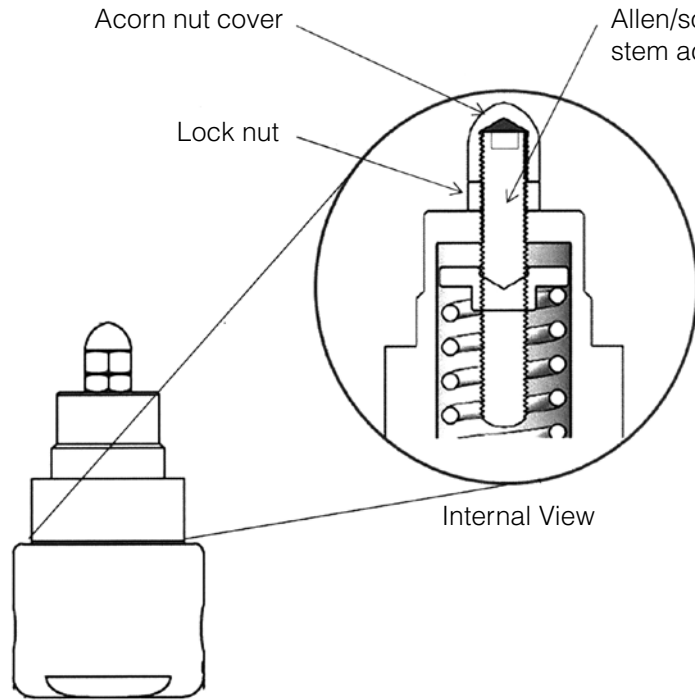
*Self Relieving

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.

Gauge Ports - Pressure Gauge

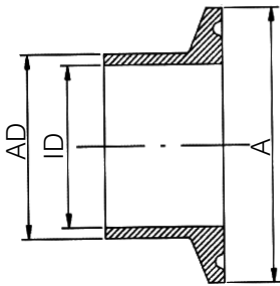
For inlet and outlet pressure gauges (and the gauges) are available as standard options

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

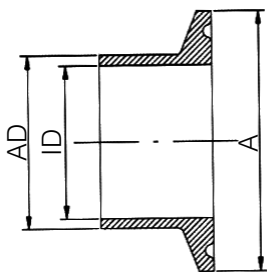
DIN & ISO TRI-CLAMP DIMENSIONS



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



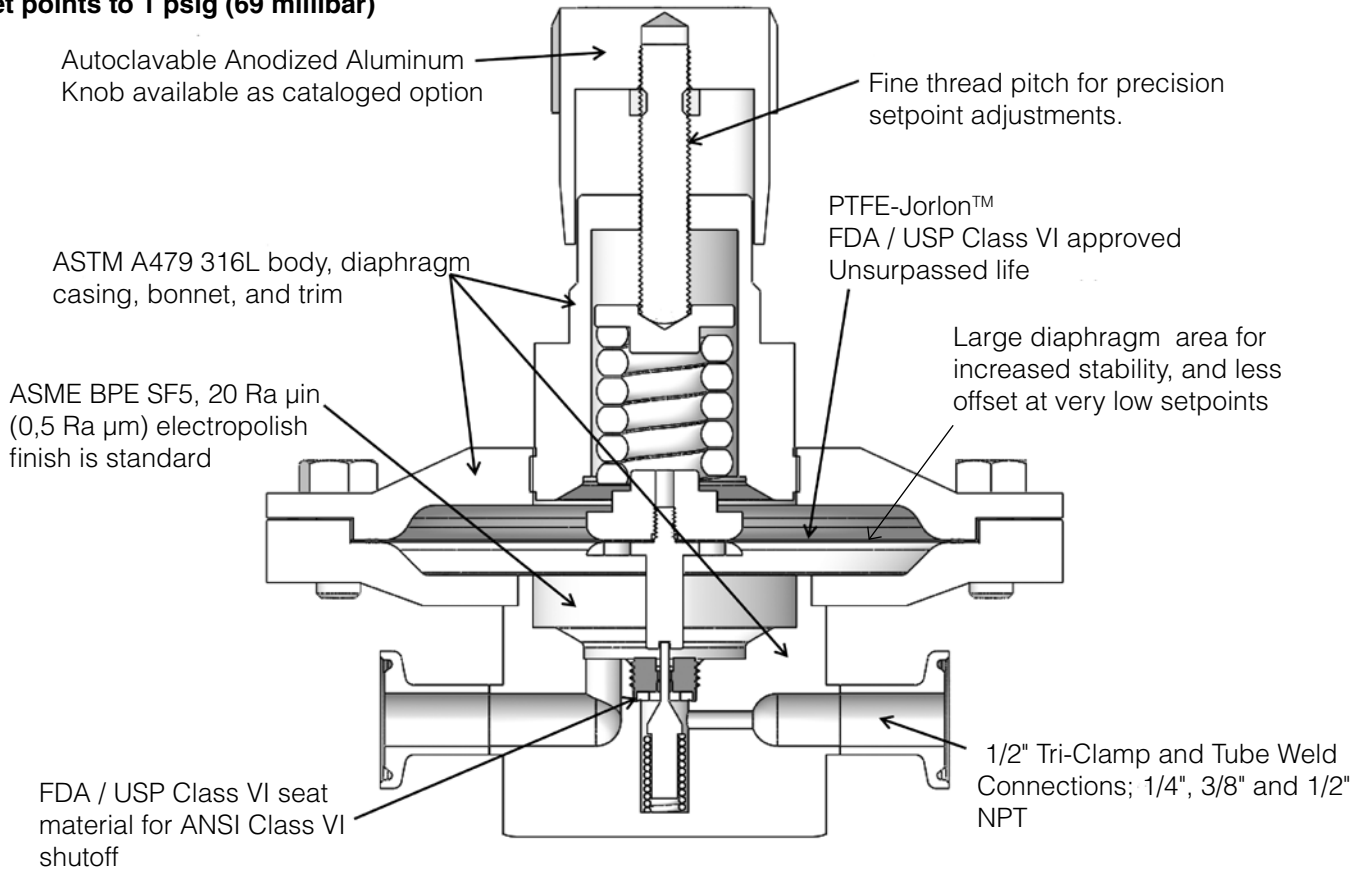
DIN 32676 Row A (ISO 11850)

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

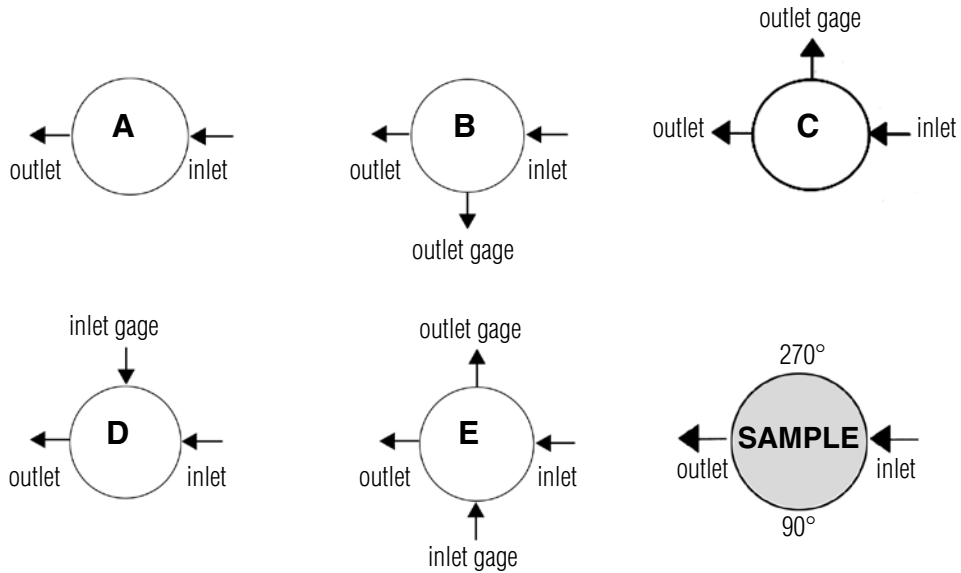
* with non-standard Tri-clamp face

FEATURES & BENEFITS

Reliable, gas pressure regulation at flows less than 1 LPM and set points to 1 psig (69 millibar)

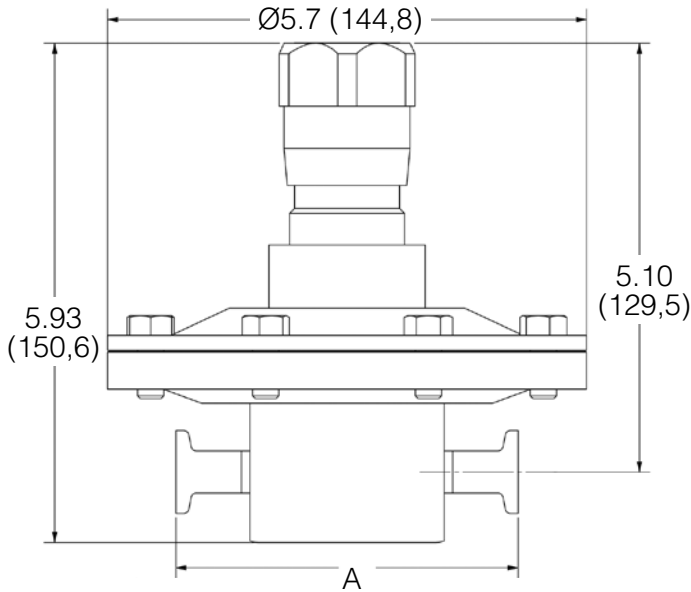


FLOW CONFIGURATIONS



* Gage ports are 1/4" FNPT (consult factory for required alternative)
Consult factory for other porting options

DIMENSIONS



• JSRFLP Series with Tri-Clamp Ends, Inches

VALVE SIZE	A
1/2"	4.07
3/4"	4.07

• JSRFLP Series with Tri-Clamp Ends, Metric

VALVE SIZE	A
DN15	103,4
DN20	103,4

• JSRFLP Series with Tube Ends, Inches

VALVE SIZE	A
1/2"	8.85
3/4"	8.85

• JSRFLP Series with Tube Ends, Metric

VALVE SIZE	A
DN15	224,8
DN20	224,8

• JSRFLP Series with FNPT/SW Ends, Inches

VALVE SIZE	A
1/4"	2.00
3/8"	2.00
1/2"	2.75

• JSRFLP Series with FNPT/SW Ends, Metric

VALVE SIZE	A
DN8	50,8
DN10	50,8
DN15	69,9

Cv TRIM SELECTION INSTRUCTIONS

1. Select a graph on the following twelve pages that best represents your outlet pressure set point and flow range.
2. Select the inlet pressure line on the graph (horizontal sloped line, P1) that reflects your application's actual inlet pressure.
3. That line indicates the Pressure/Flow capabilities of the Cv trim under flowing conditions

FLOW DATA FOR Cv TRIM SELECTION

The graphs illustrate the change or "droop" in outlet pressures as the flow rate increases, and the lockup (setpoint rise) as flow decreases and approaches zero.

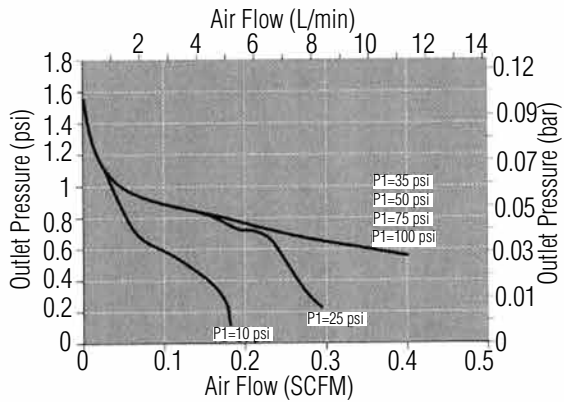
Flow Coefficient: 0.012

Maximum inlet pressure: 150 psig (10,3 bar)

Pressure Control Range

Range Spring: 0-75 psig (0-5,2 bar)

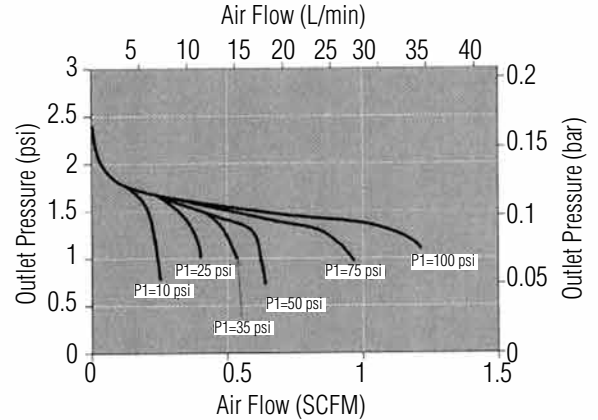
Set Point: 1 psig



Pressure Control Range

Range Spring: 0-75 psig (0-5,2 bar)

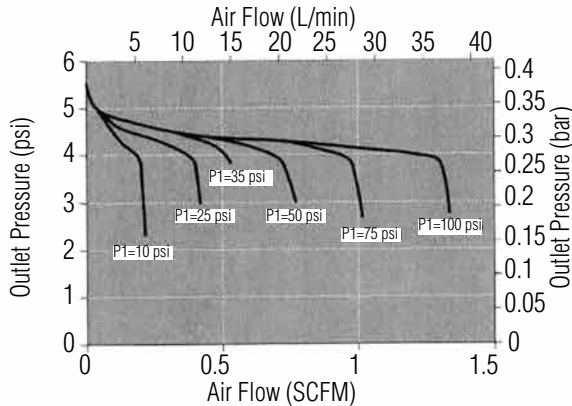
Set Point: 2 psig



Pressure Control Range

Range Spring: 0-75 psig (0-5,2 bar)

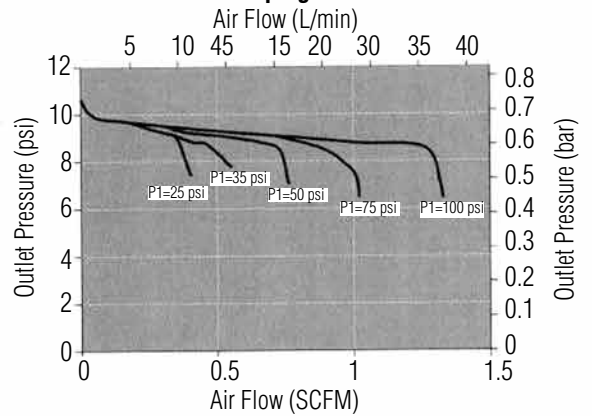
Set Point: 5 psig



Pressure Control Range

Range Spring: 0-75 psig (0-5,2 bar)

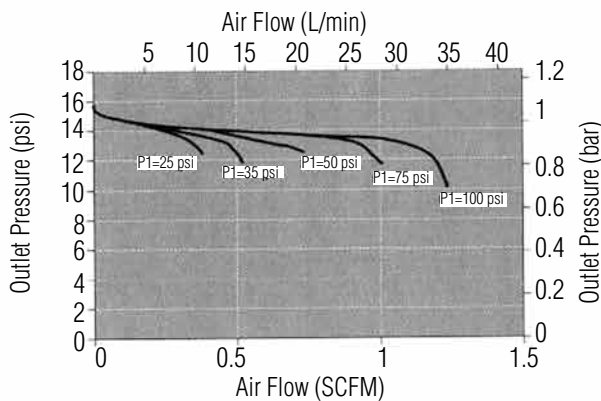
Set Point: 10 psig



Pressure Control Range

Range Spring: 0-75 psig (0-5,2 bar)

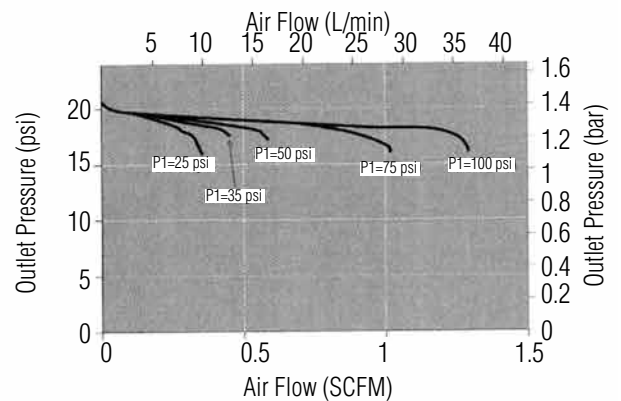
Set Point: 15 psig



Pressure Control Range

Range Spring: 0-75 psig (0-5,2 bar)

Set Point: 20 psig



FLOW DATA FOR CV TRIM SELECTION

The graphs illustrate the change or "droop" in outlet pressures as the flow rate increases, and the lockup (setpoint rise) as flow decreases and approaches zero.

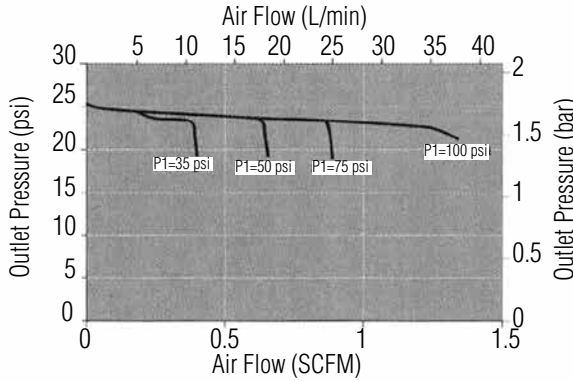
Flow Coefficient: 0.012

Maximum inlet pressure: 150 psig (10,3 bar)

Pressure Control Range

Range Spring: 0-75 psig (0-5,2 bar)

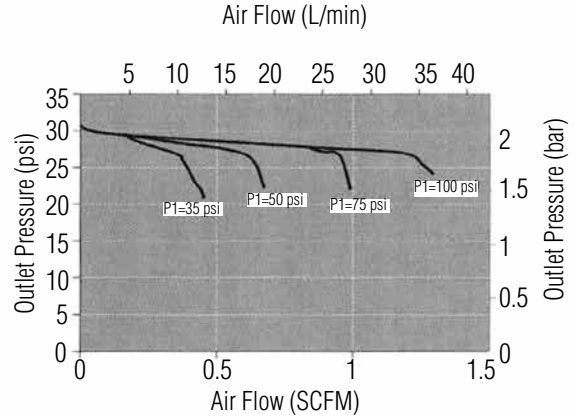
Set Point: 25 psig



Pressure Control Range

Range Spring: 0-75 psig (0-5,2 bar)

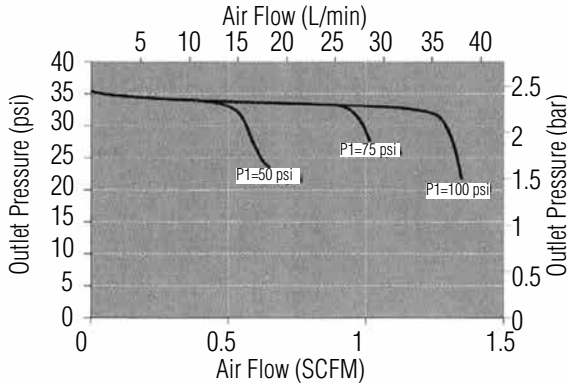
Set Point: 30 psig



Pressure Control Range

Range Spring: 0-75 psig (0-5,2 bar)

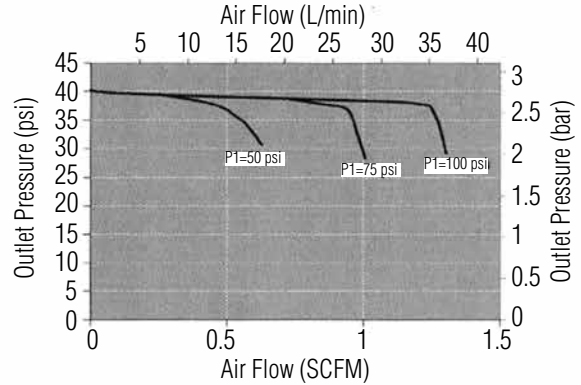
Set Point: 35 psig



Pressure Control Range

Range Spring: 0-75 psig (0-5,2 bar)

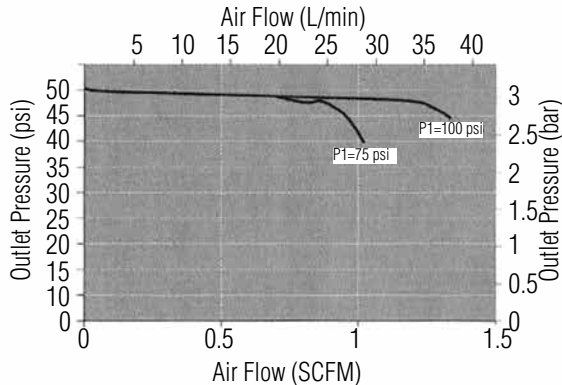
Set Point: 40 psig



Pressure Control Range

Range Spring: 0-75 psig (0-5,2 bar)

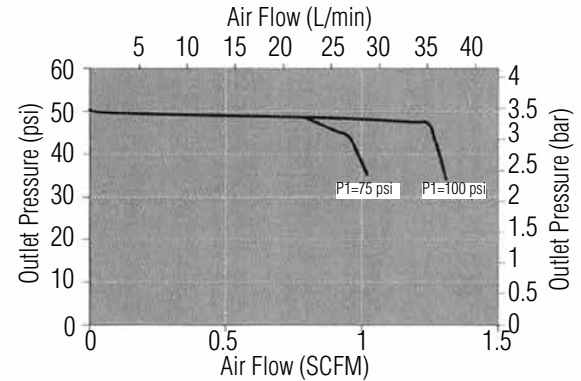
Set Point: 45 psig



Pressure Control Range

Range Spring: 0-75 psig (0-5,2 bar)

Set Point: 50 psig



FLOW DATA FOR CV TRIM SELECTION

The graphs illustrate the change or "droop" in outlet pressures as the flow rate increases, and the lockup (setpoint rise) as flow decreases and approaches zero.

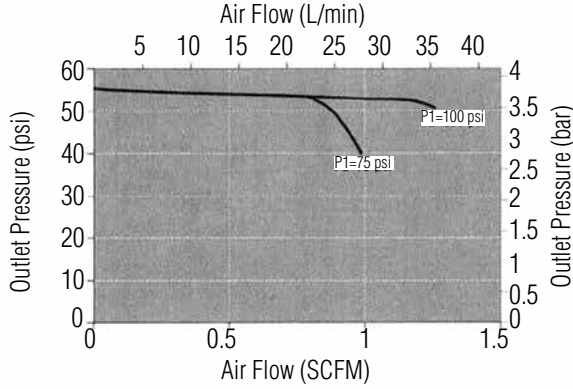
Flow Coefficient: 0.012

Maximum inlet pressure: 150 psig (10,3 bar)

Pressure Control Range

Range Spring: 0-75 psig (0-5,2 bar)

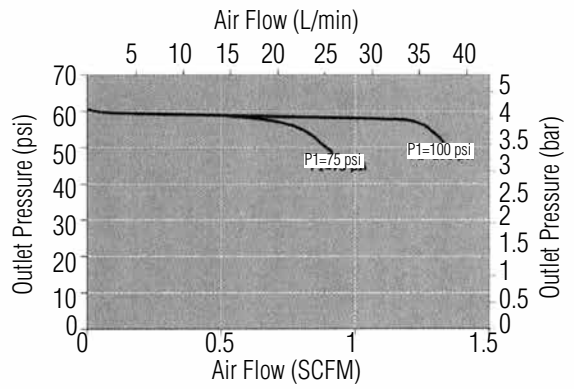
Set Point: 55 psig



Pressure Control Range

Range Spring: 0-75 psig (0-5,2 bar)

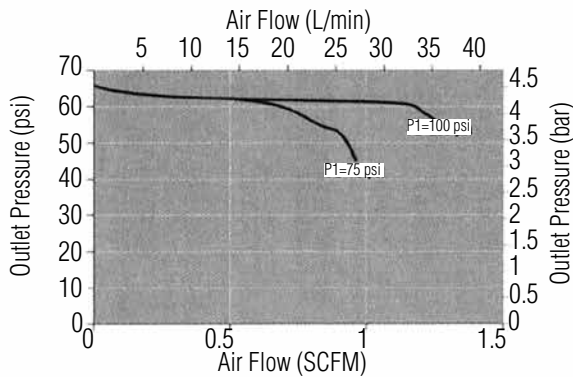
Set Point: 60 psig



Pressure Control Range

Range Spring: 0-75 psig (0-5,2 bar)

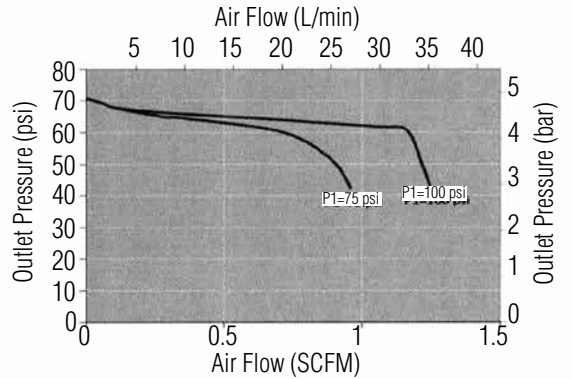
Set Point: 65 psig



Pressure Control Range

Range Spring: 0-75 psig (0-5,2 bar)

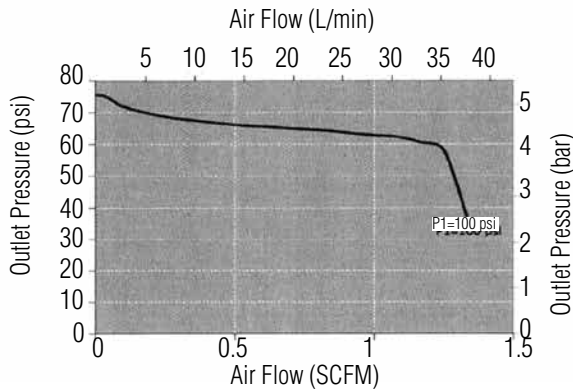
Set Point: 70 psig



Pressure Control Range

Range Spring: 0-75 psig (0-5,2 bar)

Set Point: 75 psig

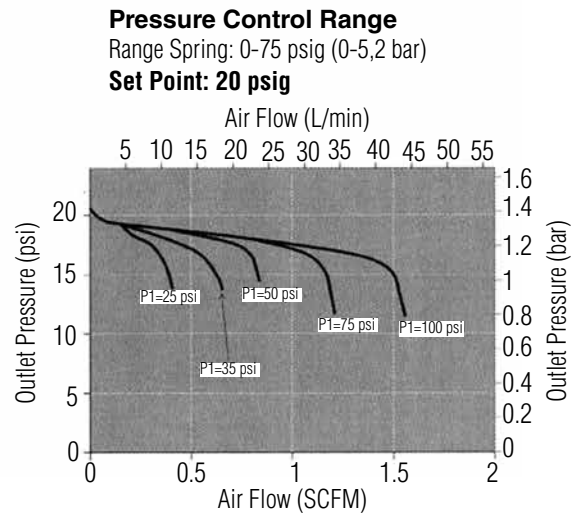
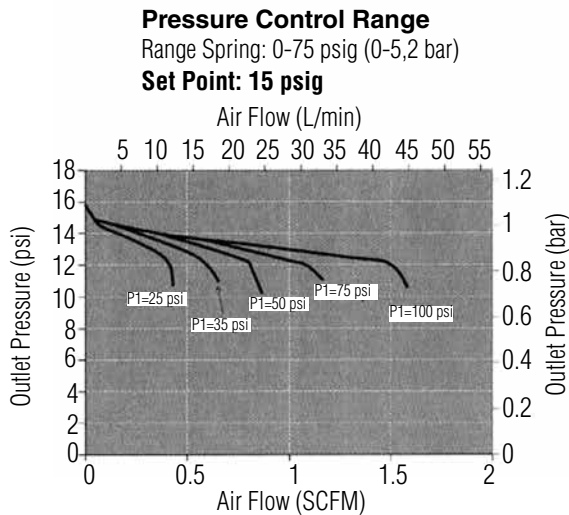
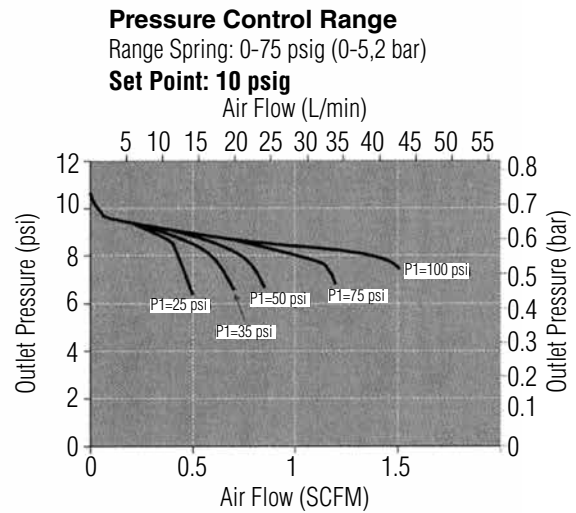
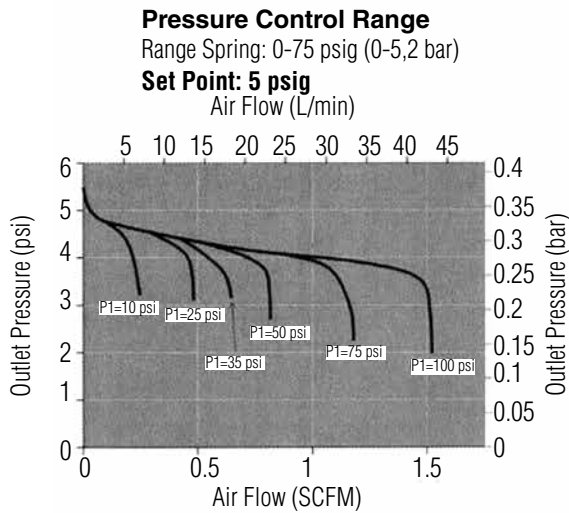
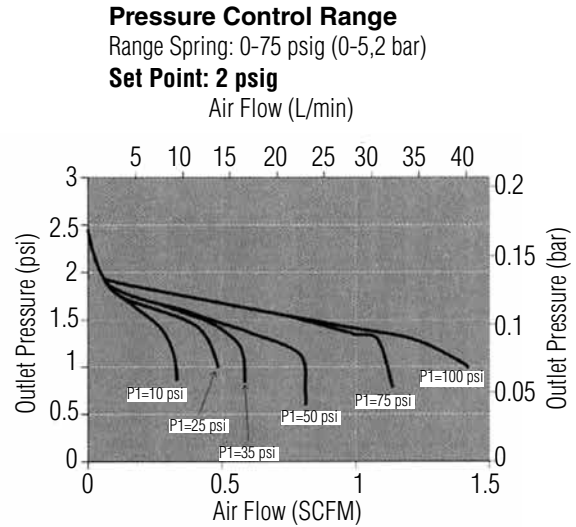
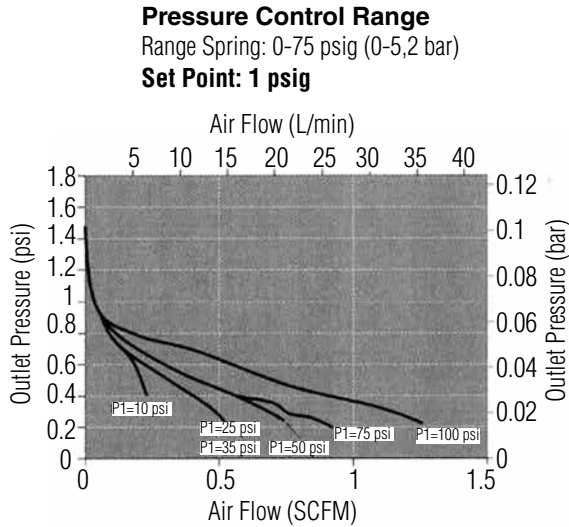


FLOW DATA FOR CV TRIM SELECTION

The graphs illustrate the change or "droop" in outlet pressures as the flow rate increases, and the lockup (setpoint rise) as flow decreases and approaches zero.

Flow Coefficient: 0.03

Maximum inlet pressure: 150 psig (10,3 bar)

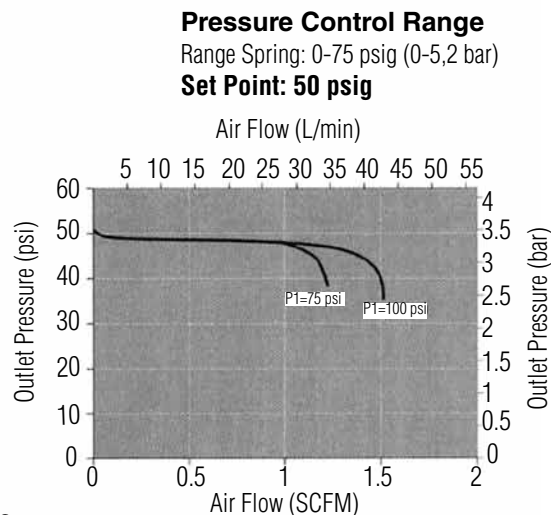
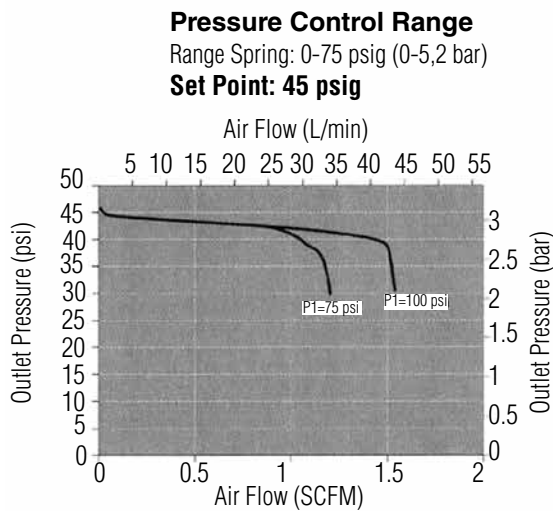
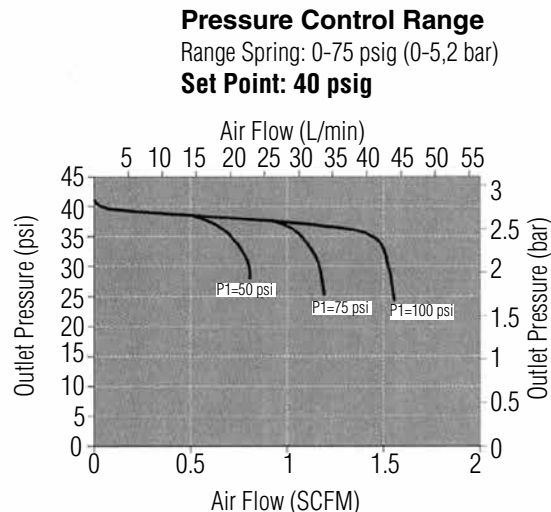
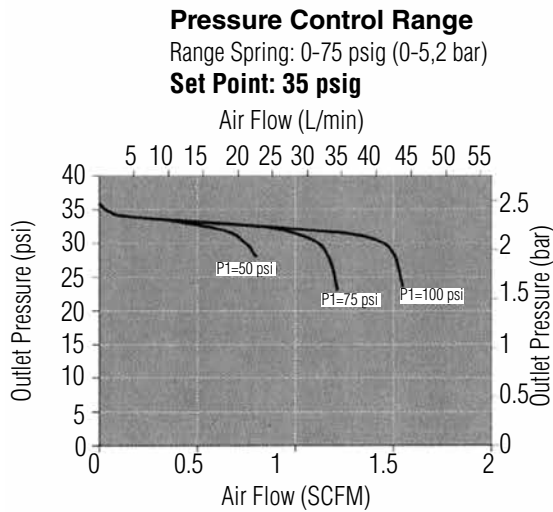
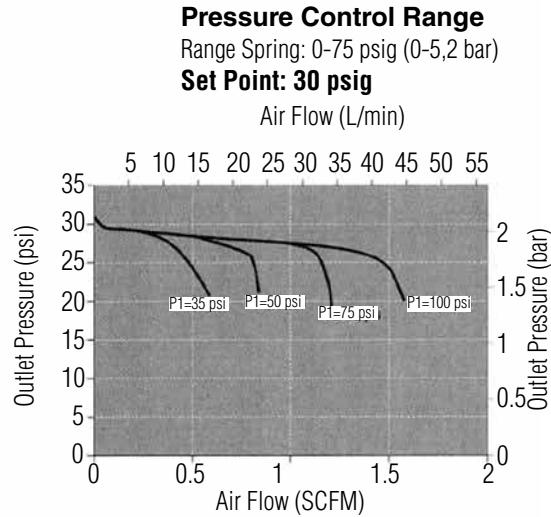
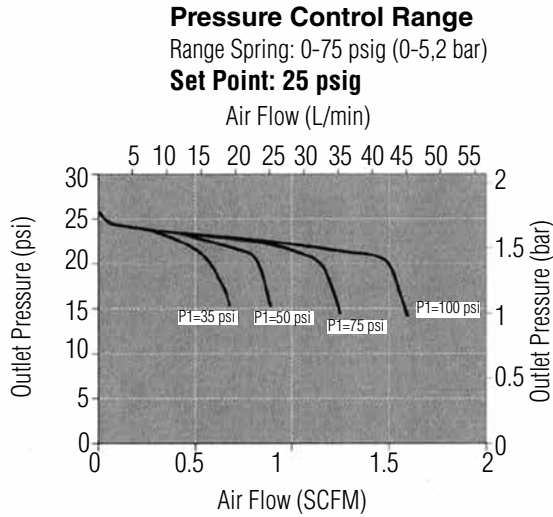


FLOW DATA FOR CV TRIM SELECTION

The graphs illustrate the change or "droop" in outlet pressures as the flow rate increases, and the lockup (setpoint rise) as flow decreases and approaches zero.

Flow Coefficient: 0.03

Maximum inlet pressure: 150 psig (10,3 bar)



FLOW DATA FOR CV TRIM SELECTION

The graphs illustrate the change or "droop" in outlet pressures as the flow rate increases, and the lockup (setpoint rise) as flow decreases and approaches zero.

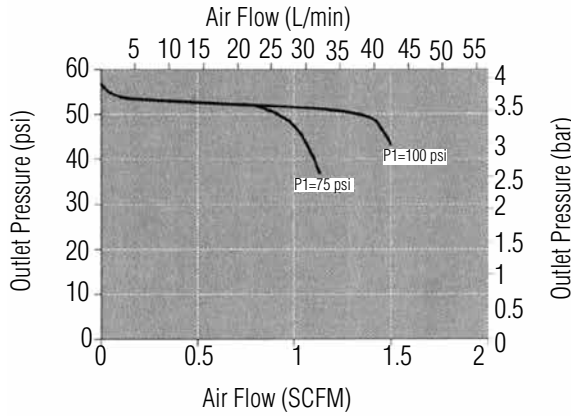
Flow Coefficient: 0.03

Maximum inlet pressure: 150 psig (10,3 bar)

Pressure Control Range

Range Spring: 0-75 psig (0-5,2 bar)

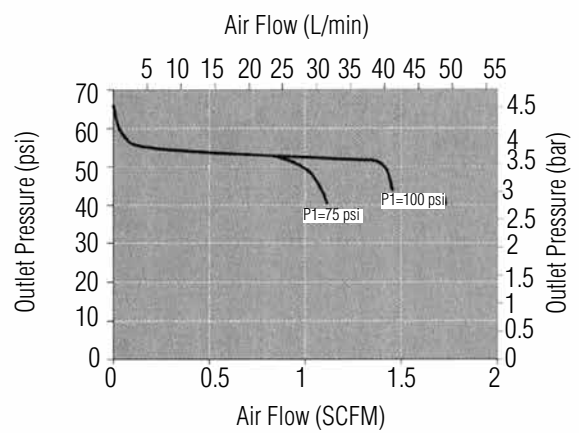
Set Point: 55 psig



Pressure Control Range

Range Spring: 0-75 psig (0-5,2 bar)

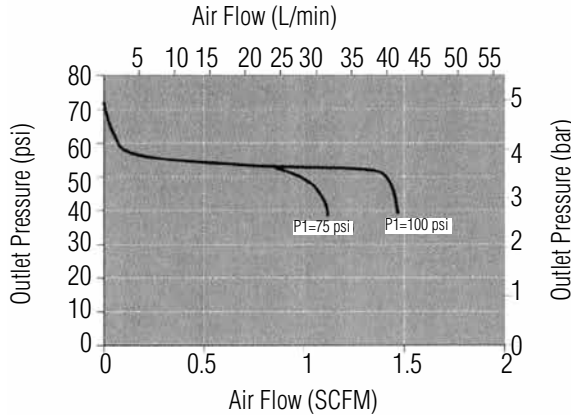
Set Point: 60 psig



Pressure Control Range

Range Spring: 0-75 psig (0-5,2 bar)

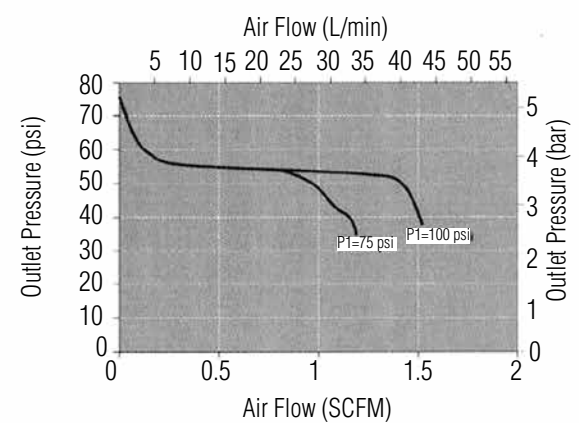
Set Point: 65 psig



Pressure Control Range

Range Spring: 0-75 psig (0-5,2 bar)

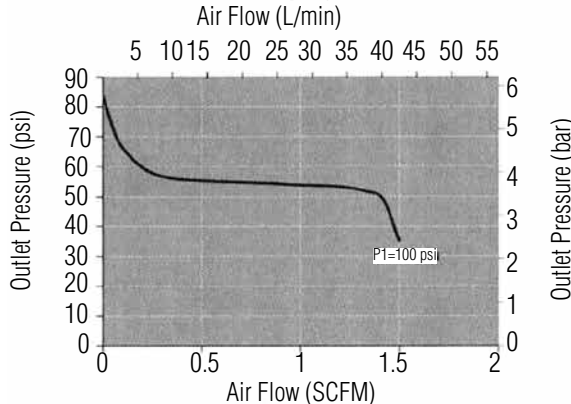
Set Point: 70 psig



Pressure Control Range

Range Spring: 0-75 psig (0-5,2 bar)

Set Point: 75 psig

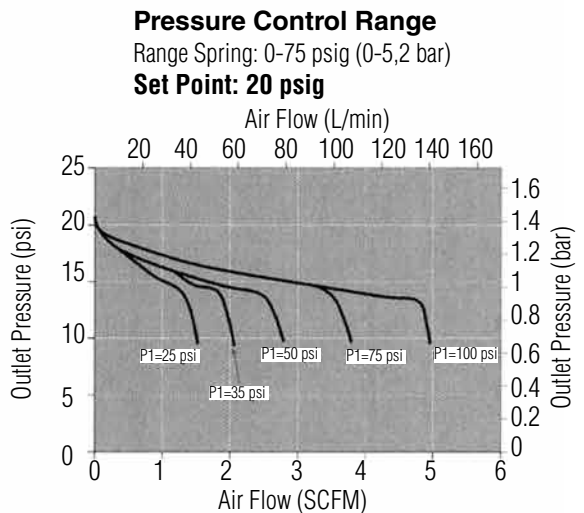
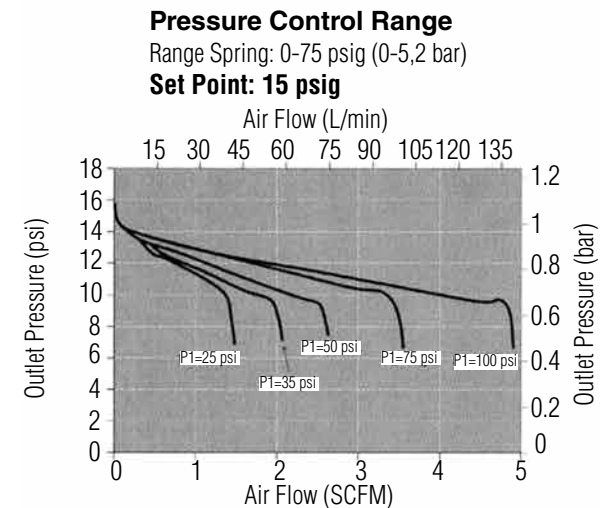
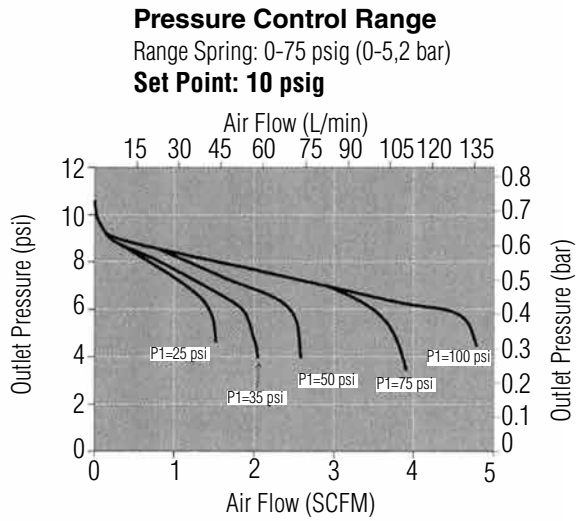
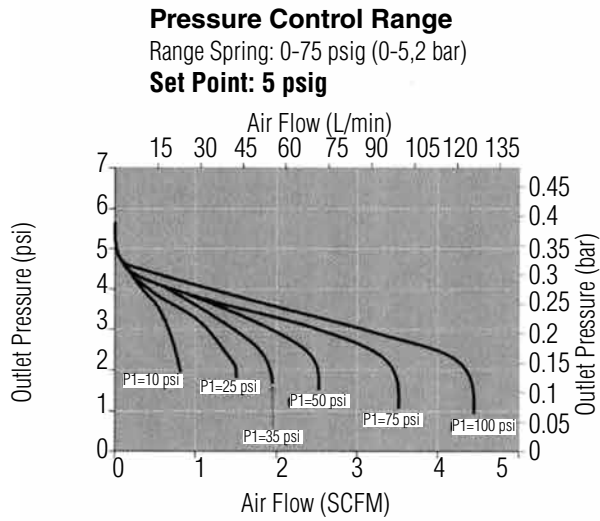
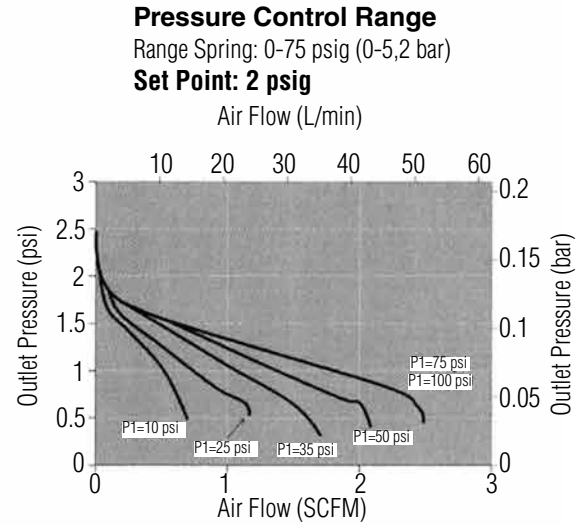
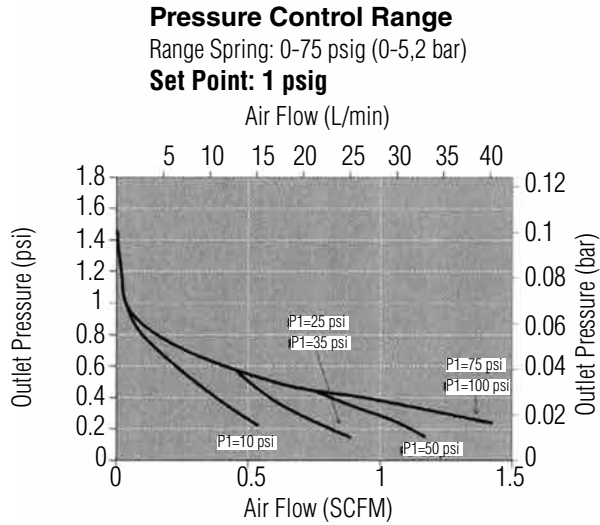


FLOW DATA FOR CV TRIM SELECTION

The graphs illustrate the change or "droop" in outlet pressures as the flow rate increases, and the lockup (setpoint rise) as flow decreases and approaches zero.

Flow Coefficient: 0.08

Maximum inlet pressure: 150 psig (10,3 bar)



FLOW DATA FOR CV TRIM SELECTION

The graphs illustrate the change or "droop" in outlet pressures as the flow rate increases, and the lockup (setpoint rise) as flow decreases and approaches zero.

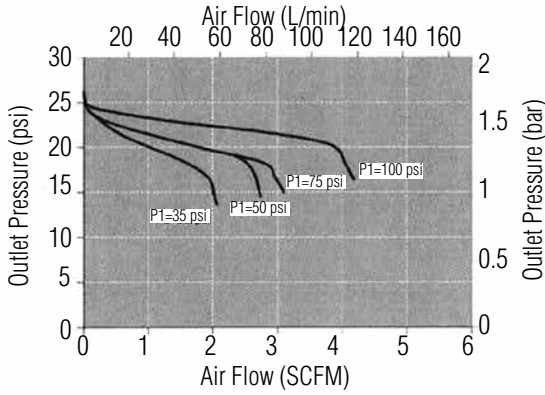
Flow Coefficient: 0.08

Maximum inlet pressure: 150 psig (10,3 bar)

Pressure Control Range

Range Spring: 0-75 psig (0-5,2 bar)

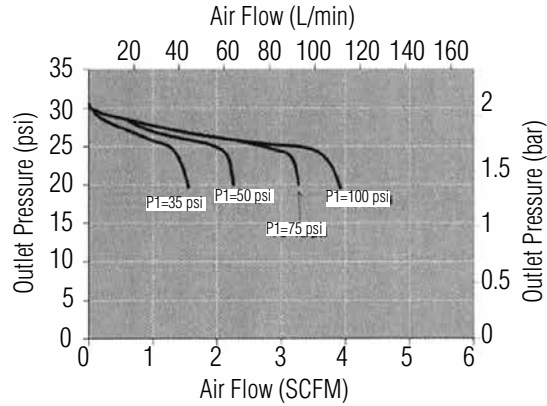
Set Point: 25 psig



Pressure Control Range

Range Spring: 0-75 psig (0-5,2 bar)

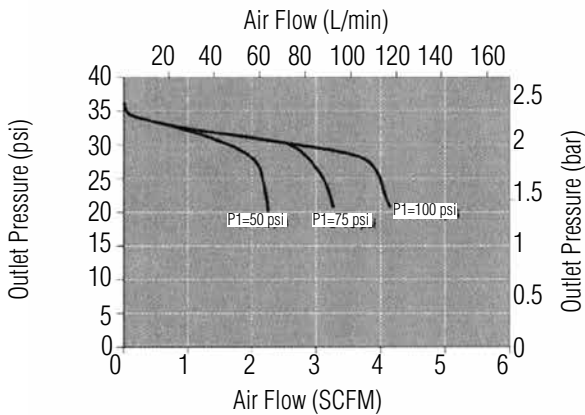
Set Point: 30 psig



Pressure Control Range

Range Spring: 0-75 psig (0-5,2 bar)

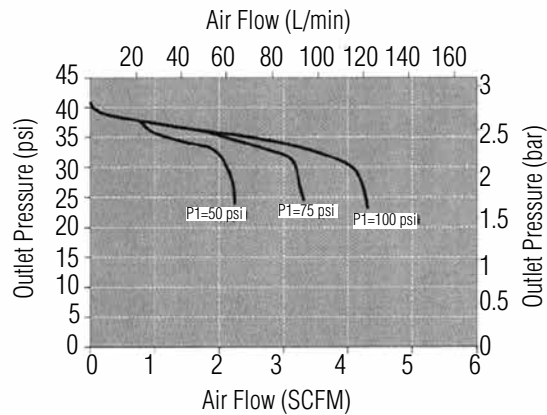
Set Point: 35 psig



Pressure Control Range

Range Spring: 0-75 psig (0-5,2 bar)

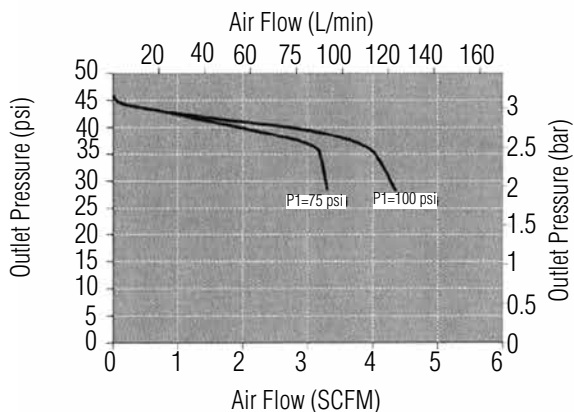
Set Point: 40 psig



Pressure Control Range

Range Spring: 0-75 psig (0-5,2 bar)

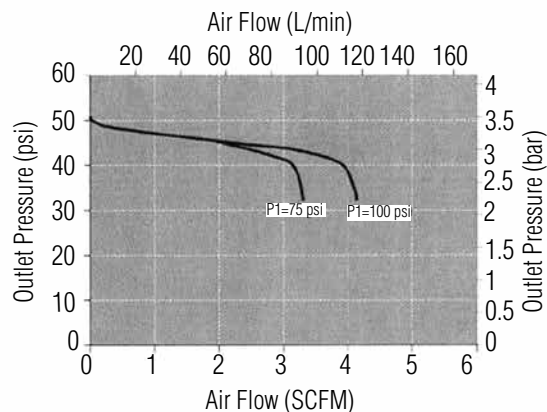
Set Point: 45 psig



Pressure Control Range

Range Spring: 0-75 psig (0-5,2 bar)

Set Point: 50 psig

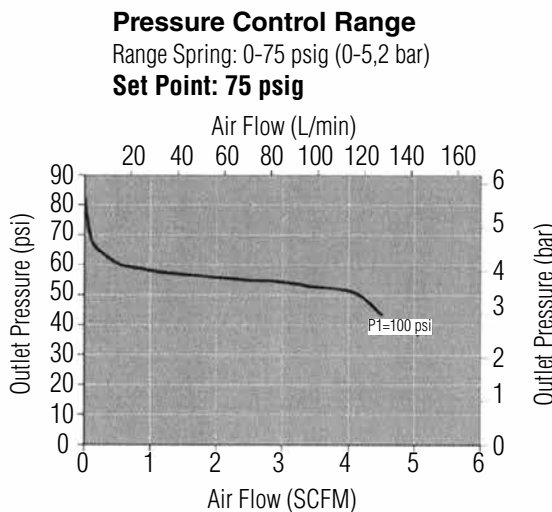
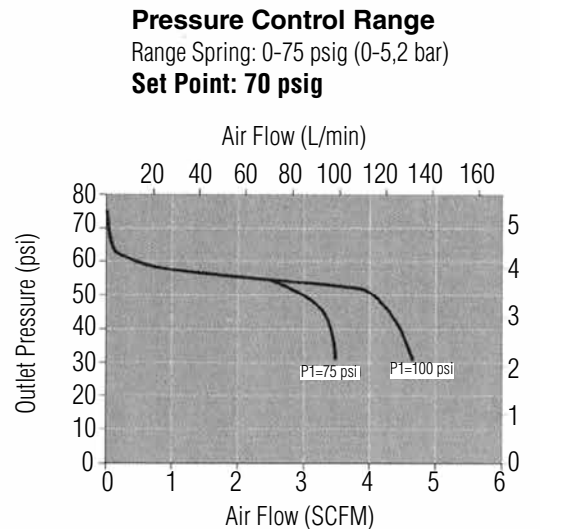
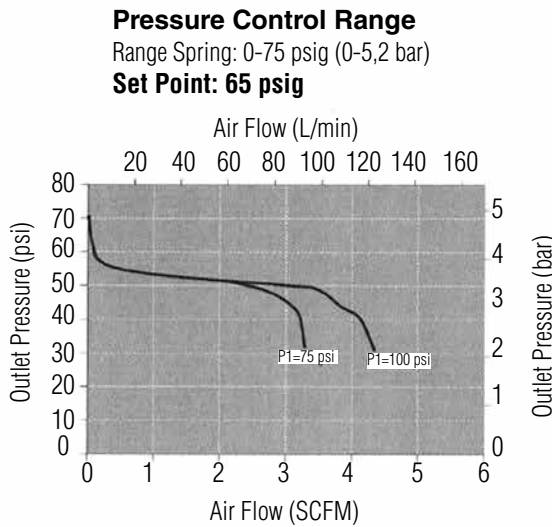
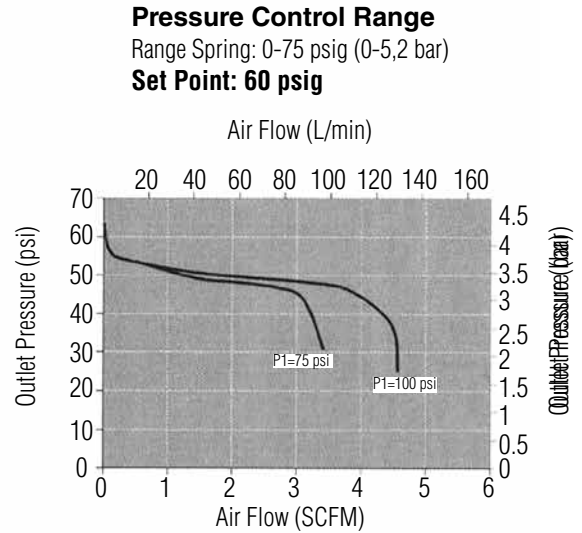
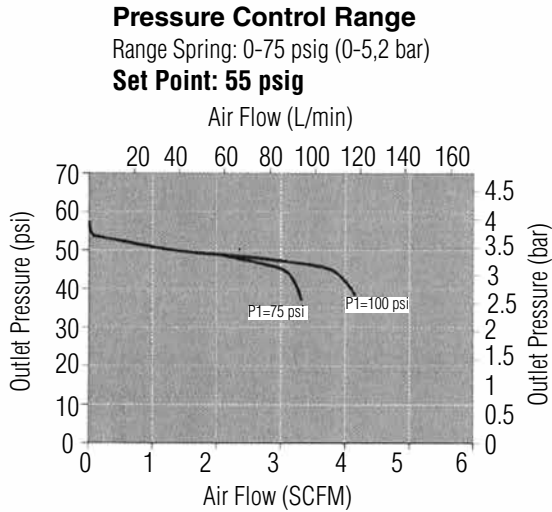


FLOW DATA FOR CV TRIM SELECTION

The graphs illustrate the change or "droop" in outlet pressures as the flow rate increases, and the lockup (setpoint rise) as flow decreases and approaches zero.

Flow Coefficient: 0.08

Maximum inlet pressure: 150 psig (10,3 bar)



FLOW DATA FOR CV TRIM SELECTION

The graphs illustrate the change or "droop" in outlet pressures as the flow rate increases, and the lockup (setpoint rise) as flow decreases and approaches zero.

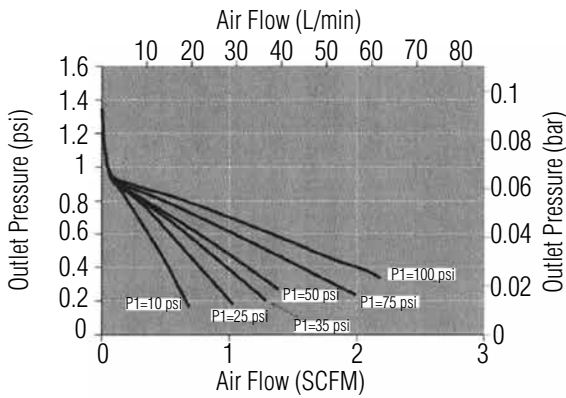
Flow Coefficient: 0.20

Maximum inlet pressure: 150 psig (10,3 bar)

Pressure Control Range

Range Spring: 0-75 psig (0-5,2 bar)

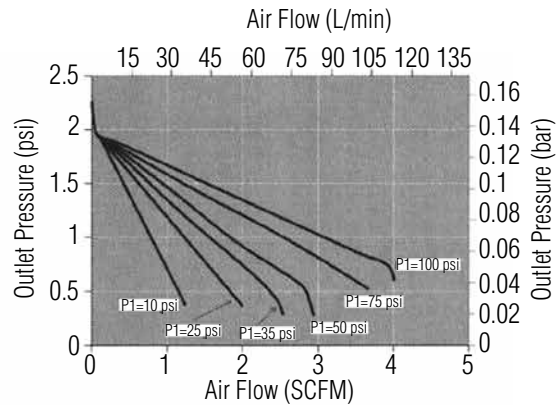
Set Point: 1 psig



Pressure Control Range

Range Spring: 0-75 psig (0-5,2 bar)

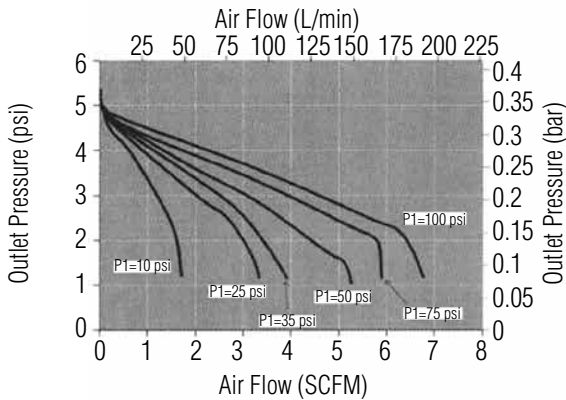
Set Point: 2 psig



Pressure Control Range

Range Spring: 0-75 psig (0-5,2 bar)

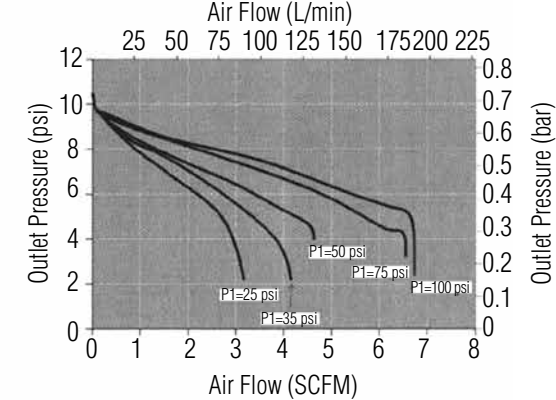
Set Point: 5 psig



Pressure Control Range

Range Spring: 0-75 psig (0-5,2 bar)

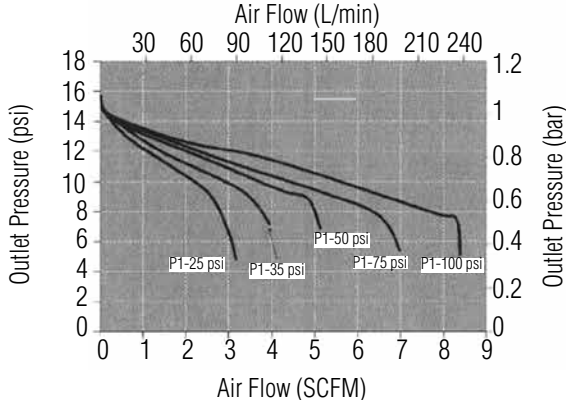
Set Point: 10 psig



Pressure Control Range

Range Spring: 0-75 psig (0-5,2 bar)

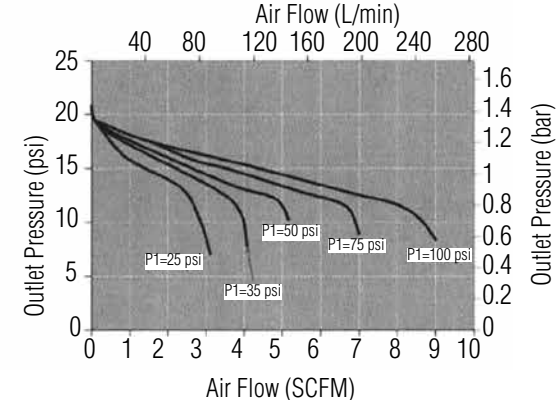
Set Point: 15 psig



Pressure Control Range

Range Spring: 0-75 psig (0-5,2 bar)

Set Point: 20 psig

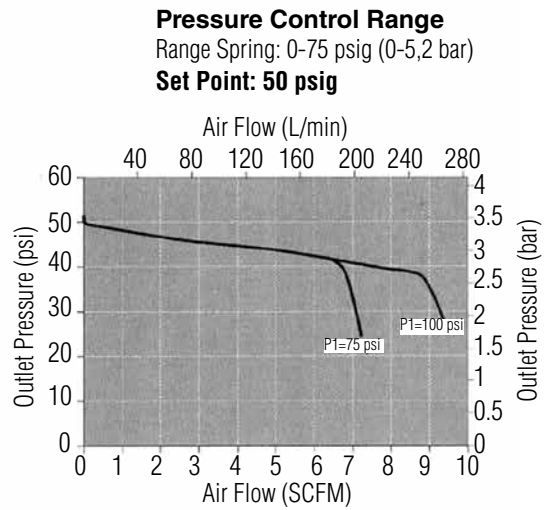
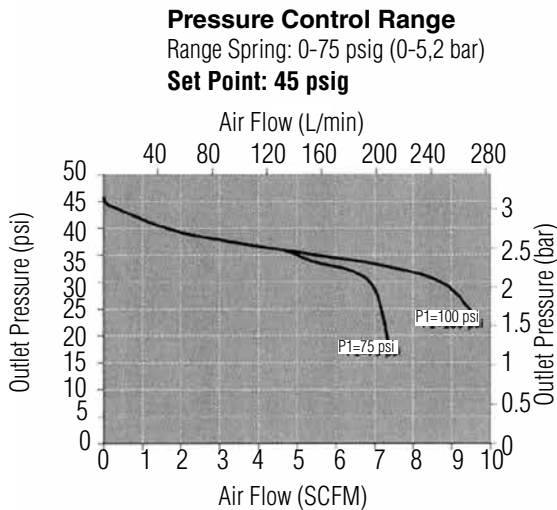
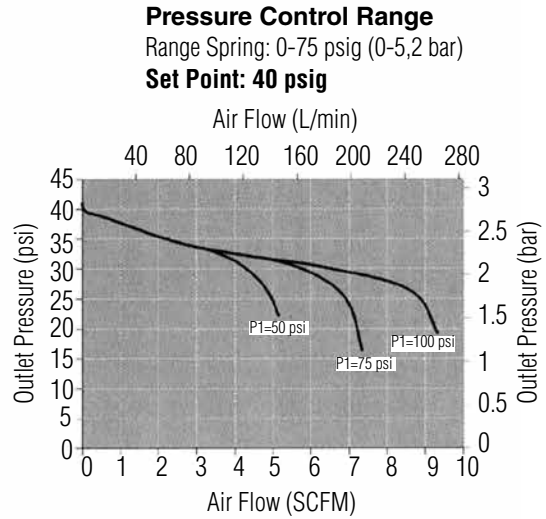
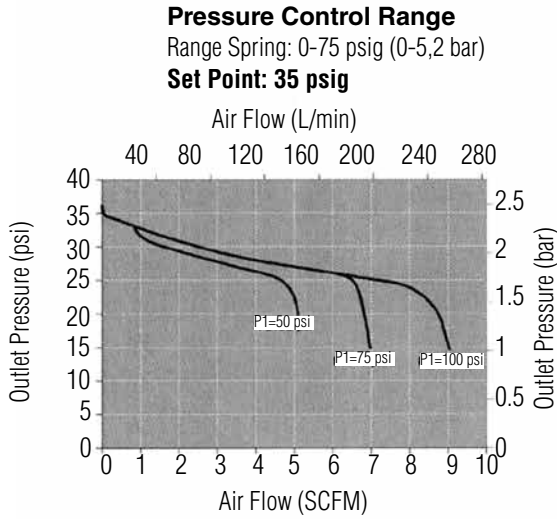
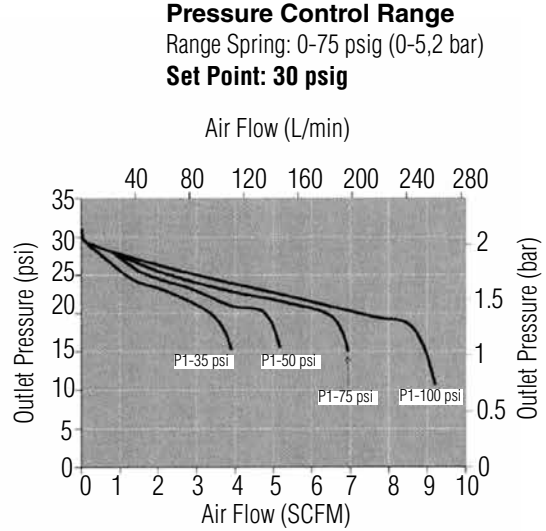
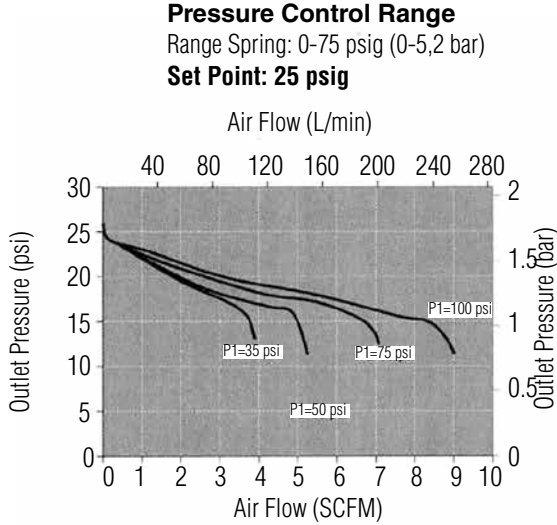


FLOW DATA FOR CV TRIM SELECTION

The graphs illustrate the change or "droop" in outlet pressures as the flow rate increases, and the lockup (setpoint rise) as flow decreases and approaches zero.

Flow Coefficient: 0.20

Maximum inlet pressure: 150 psig (10,3 bar)



FLOW DATA FOR CV TRIM SELECTION

The graphs illustrate the change or "droop" in outlet pressures as the flow rate increases, and the lockup (setpoint rise) as flow decreases and approaches zero.

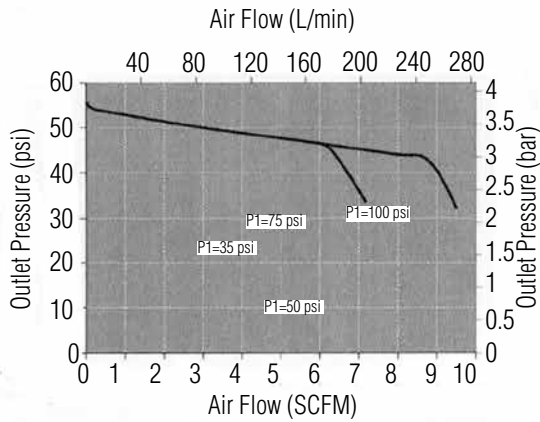
Flow Coefficient: 0.20

Maximum inlet pressure: 150 psig (10,3 bar)

Pressure Control Range

Range Spring: 0-75 psig (0-5,2 bar)

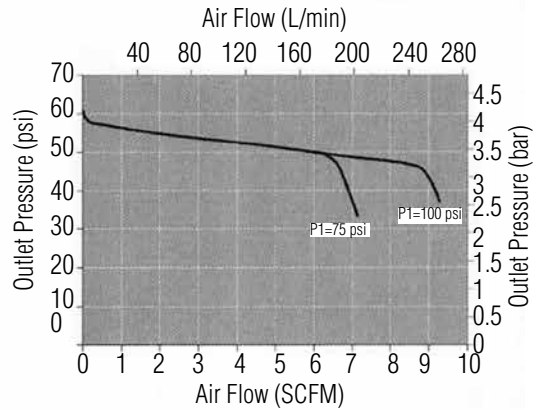
Set Point: 55 psig



Pressure Control Range

Range Spring: 0-75 psig (0-5,2 bar)

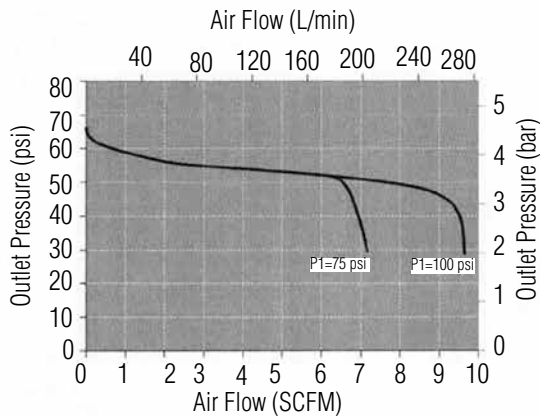
Set Point: 60 psig



Pressure Control Range

Range Spring: 0-75 psig (0-5,2 bar)

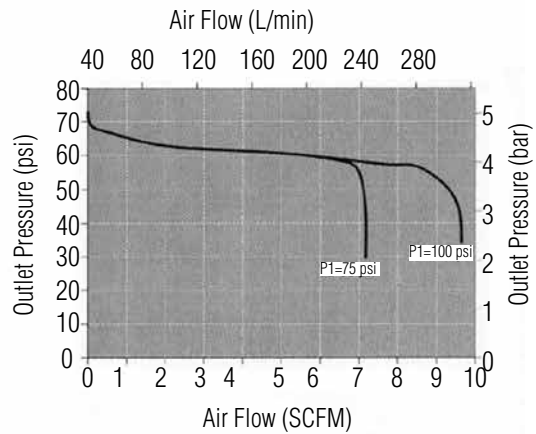
Set Point: 65 psig



Pressure Control Range

Range Spring: 0-75 psig (0-5,2 bar)

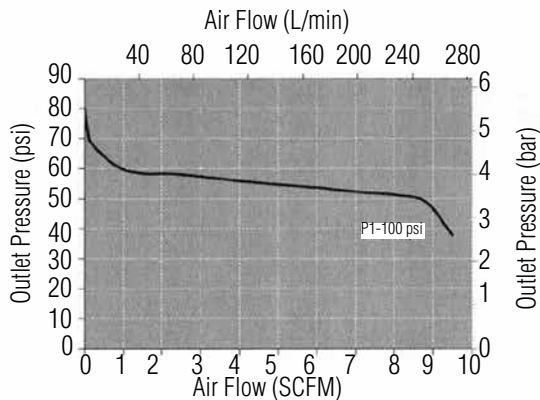
Set Point: 70 psig



Pressure Control Range

Range Spring: 0-75 psig (0-5,2 bar)

Set Point: 75 psig



JSRFLP SERIES LOW FLOW LOW PRESSURE REDUCING VALVE

ORDERING SCHEMATIC

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

Model	
JSRFLP	Low Flow Low 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 ¹	ISO Tri-Clamp, DN15	
V ¹	ISO w/ 34.0mm face T-Clamp, DN15	
R ¹	ISO T-Clamp, DN20	
D ²	DIN Tri-Clamp, DN15	
V 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	
H ⁴	ISO Tube Weld, DN15	
ZZ	Non-Standard	

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

² Acc. to DIN 32676 Row A (DIN 11850). See dimensions, page 3

³ Acc. to DIN 11866, DIN 11850 Row A

⁴ Acc. to DIN 11866 Row B, (ISO 1127)

3 & 4	Trim
1S	Cv 0.012 (Kv 0,010)
4S*	Cv 0.03 (Kv 0,026)
2S	Cv 0.08 (Kv 0,069)
3S	Cv 0.2 (Kv 0,173)
1R	Cv 0.012 Self-Relieving
4R*	CV 0.03 Self-Relieving
2R	Cv 0.08 Self-Relieving
3R	Cv 0.2 Self-Relieving
ZZ	Non-Standard

* Though out of sequence, "4S" and "4R" are the correct order codes for Cv 0.03

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	1 - 75 psi
E2	25 - 100 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)
BB	0 - 60 psig / bar (Dual)
CC	0 - 100 psig / bar (Dual)
DD	0 - 160 psig / bar (Dual)
NN	None
ZZ	Non-Standard

15	Outlet Gauge
D	0 - 15 psig/bar (Dual)
A	0 - 30 psig/bar (Dual)
B	0 - 60 psig / bar (Dual)
C	0 - 100 psig / bar (Dual)
N	None
Z	Non-Standard

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

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