

JSR Series

High Purity Bio-Pharma Gas Pressure Reducing Valves

JSR is the first high purity gas pressure regulator designed and built specifically for hygienic, ASME BPE gas applications.

Traditionally, manufacturers adapted their industrial gas regulators for use in biopharm by simply changing the construction materials and surface finish. Not so with the JSR. It's been designed specifically to eliminate the exposed threaded connections and permanent contaminant traps below the diaphragm. And, it features an in-line removable trim set to facilitate quick trim change out and cleaning without valve removal or disassembly.

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, electropolished) standard. The valve is outfitted with the rugged Jorlon diaphragm and Teflon, PEEK, or EPDM seats and seals that are all FDA approved, USP Class VI compliant materials. These materials of construction enable JSR to withstand the rigors of SIP and CIP processes if required. And, the new EPDM seat reduces lockup to less than 2.5 psig.

FEATURES

- No exposed threaded connections below diaphragm
- In-line removable seat and trim facilitate cleaning and maintenance
- Barstock construction guarantees material integrity and surface finish
- High flow rate coupled with high rangeability reduces need for reduced trim sizes
- Minimized internal volume
- Proprietary Jorlon diaphragm material provides exceptionally long life and CIP/SIP capability
- Soft seat material for ANSI Class VI shutoff
- New EPDM seat for low lockup and tight shutoff on no flow or deadhead blanketing applications

DOCUMENTATION AND TRACEABILITY

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! Flow data charts with
P1 and P2 for all applications**

**New Option!
EPDM seat for low lockup**



APPLICATIONS

Ideal for clean gases typically found in bio-pharmaceutical, pharmaceutical and food & beverage processes including:

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

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.

CRN Registration Number Available



Steriflow by Jordan Valve
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513.533.5600 • 800.543.7311 • 513.871.0105 (f)
steriflow@richardsind.com • www.steriflowvalve.com

SPECIFICATIONS

Sizes: 1/2" (DN15) & 3/4" (DN20)

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 (176,7°C) FDA, USP Class VI
- EPDM to +300°F (150°C) FDA, USP Class VI*

Body Material: 316L SST

Diaphragm Material: PTFE-based Jorlon FDA, USP Class VI

Maximum Inlet Pressure: 150 psig (10,5 bar)

Optional Cleaning Specifications

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

Spring Ranges: 5–70 psi (0,3–4,8 bar); 15-90 psi

(0,1–6,2 bar); 50–125 psi (3,4–8,6 bar)

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

Flow Characteristics:

- High Flow: Trim Cv 0.8; Cv for relief valve sizing is 1.9
- Low Flow: Trim Cv 0.5; Cv for relief valve sizing is 0.6

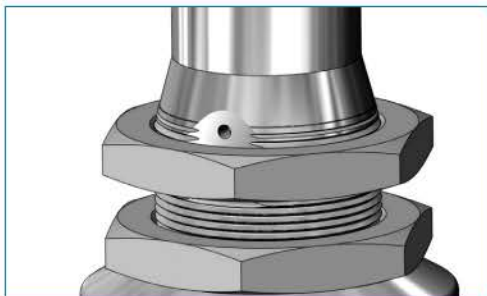
Surface Finish:

- 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

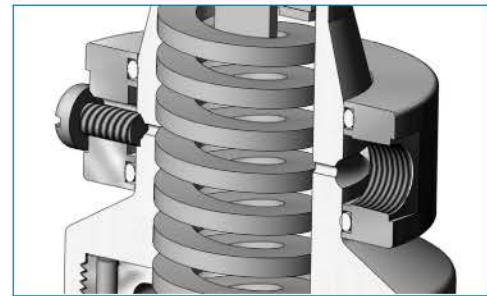
Options:

- Panel Mounting
- Captured Vent
- Self Relieving

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.

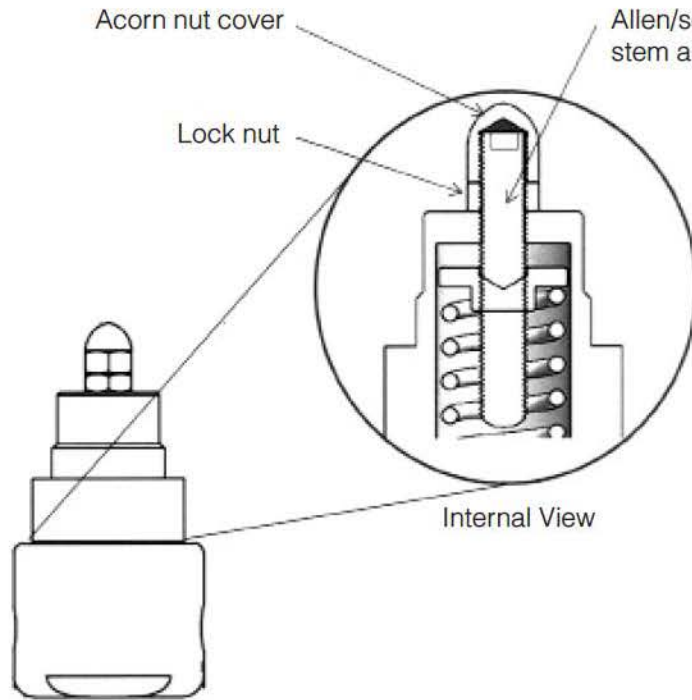
Panel Mount

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

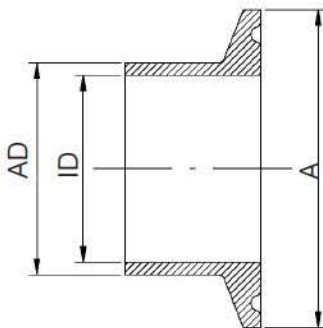
The self relieving option is used for internal venting of downstream pressure. From a practical standpoint, it allows for immediate reduction in pressure setpoints and automatically alleviates regulator lock up. (Recommended with outlet gauges)

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

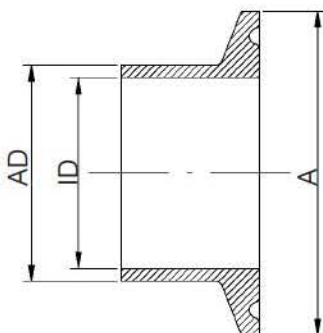
DIN & ISO TRI-CLAMP DIMENSIONS



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	23.7

* with non-standard Tri-clamp face

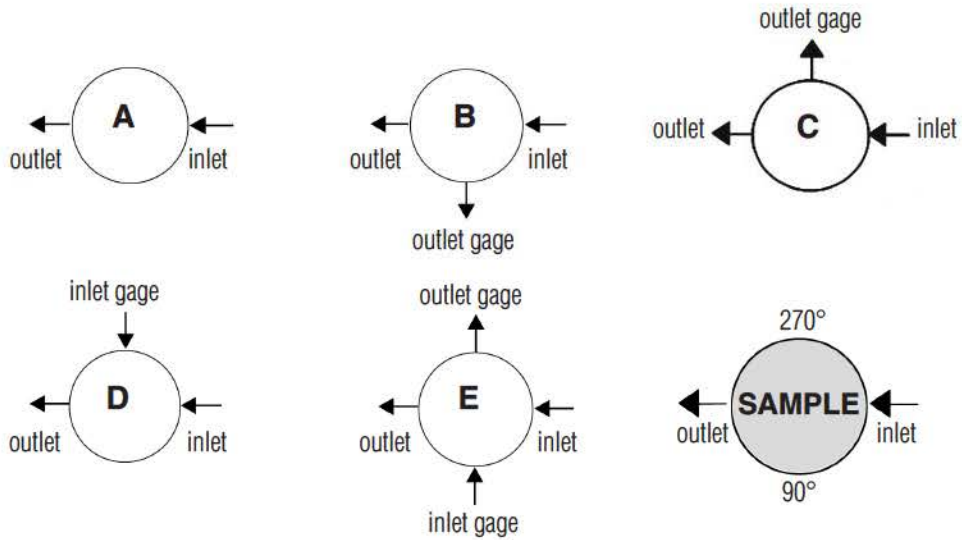


DIN 32676 Row A (DIN 11850)

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

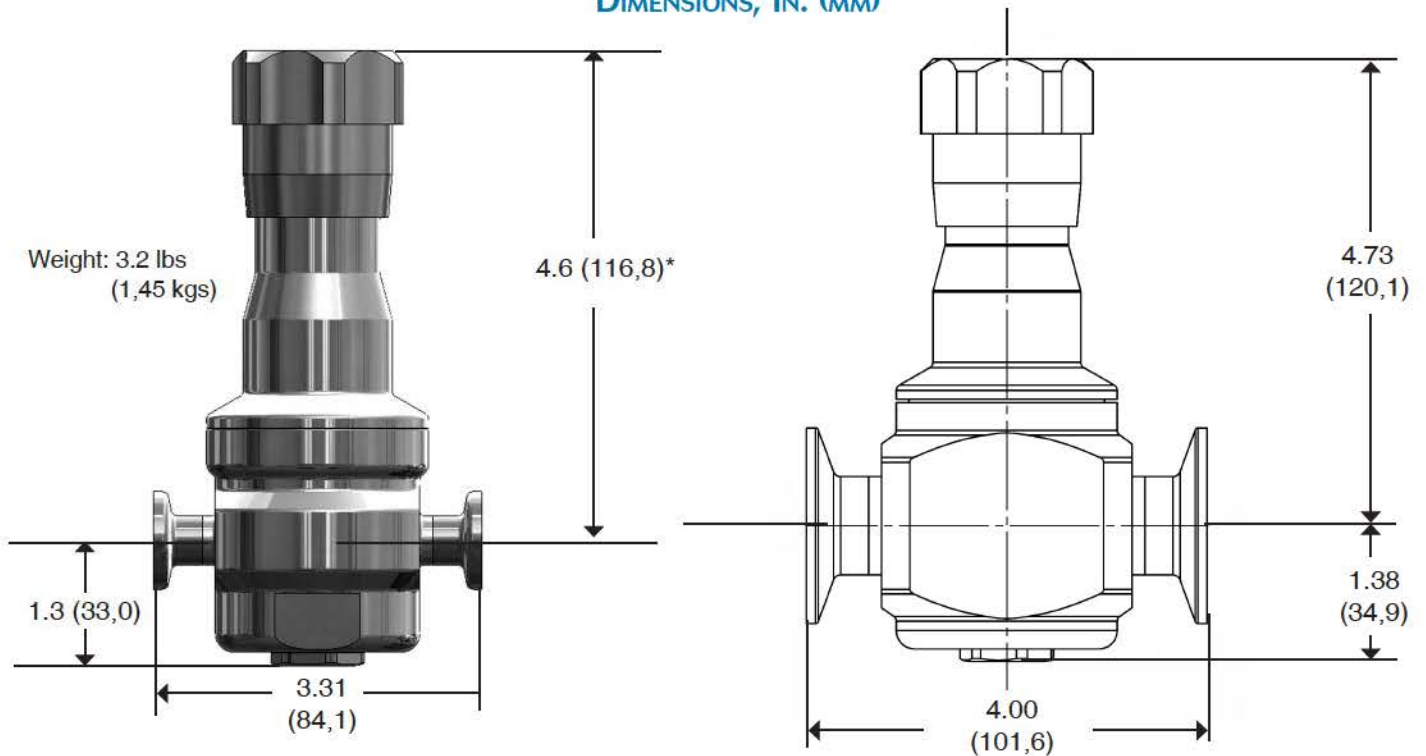
* with non-standard Tri-clamp face

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, IN. (MM)



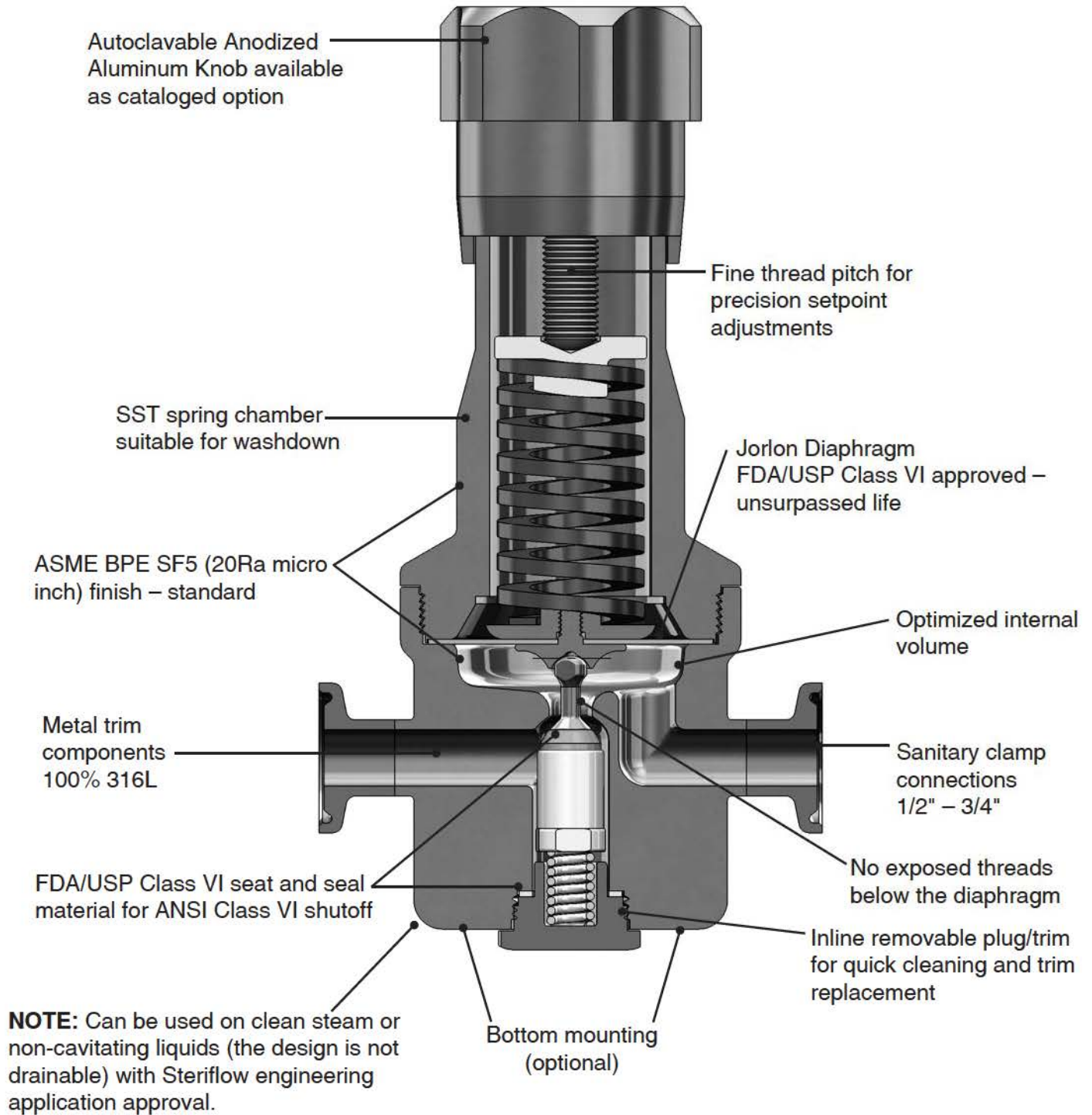
* Add 0.75" (19,1) for easy removal

Body Option RA With ISO DN20 Tri-Clamp Ends

SAMPLE SPECIFICATIONS

Stainless Steel pressure regulator shall be made from ASTM A479 barstock material, which includes body and all wetted metal parts. Regulator shall be activated by an un-tied, FDA approved, USP Class VI certified Jorlon diaphragm. Regulator shall be free of exposed threads within wetted process area and valve internal to hold minimal media volume. Regulator shall have trim that can be replaced inline without dome/spring chamber disassembly.

FEATURES & BENEFITS



CV TRIM SELECTION INSTRUCTIONS

To select a valve with the proper Cv:

1. Select a graph on the following 21 pages that best represents your outlet pressure set point and flow range
2. Looking at that graph, select the closest inlet pressure line (horizontal sloped line, P1) that best reflects your application's actual inlet pressure. That line indicates the Pressure/Flow capabilities and offset (droop) of the trim (Flow Coefficient, Cv) under flowing conditions.

Note: If your exact outlet pressure set point or inlet pressure is not listed you will have to interpolate.

- Your particular inlet pressure line will be very similar in length and slope to the line chosen on any particular graph.

- The same is true for your outlet pressure set point, simply shift the line up or down.

3. The Cv and range spring are listed in bold at the upper left of the page of your chosen graph. You will need that for model number selection (See page 14).

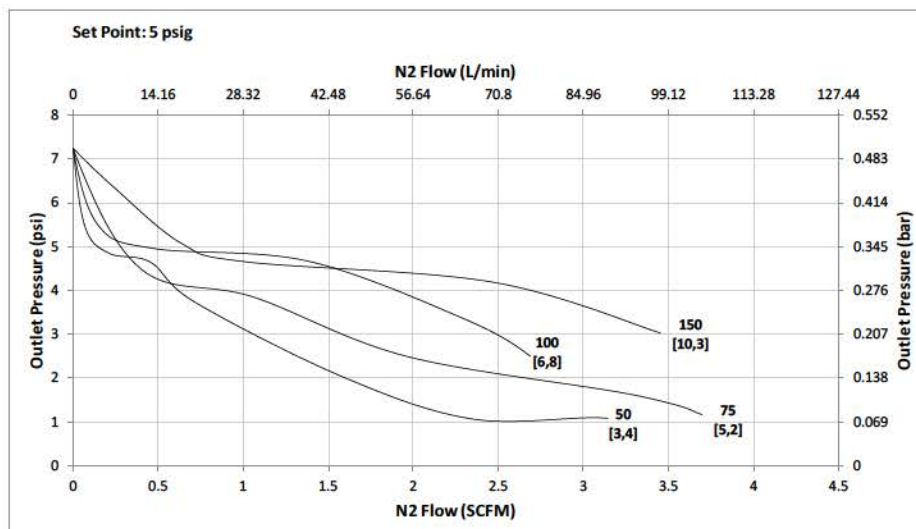
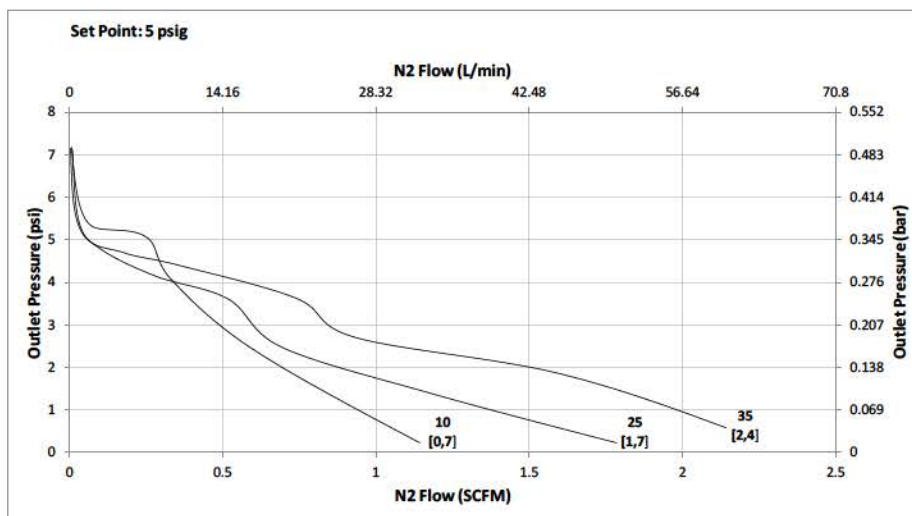
FLOW DATA FOR CV TRIM SELECTION

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: 0.5

Range Spring: **5 - 90 psig** (0,34 - 6,2 bar)

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



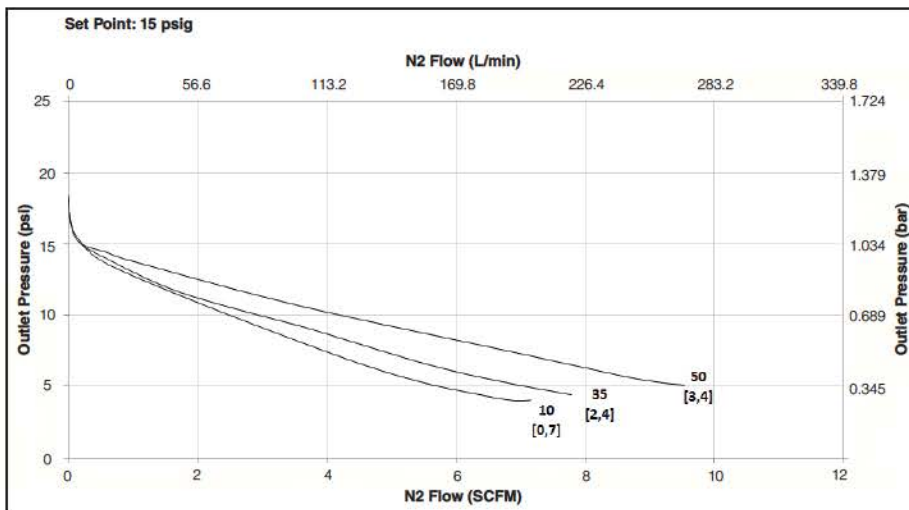
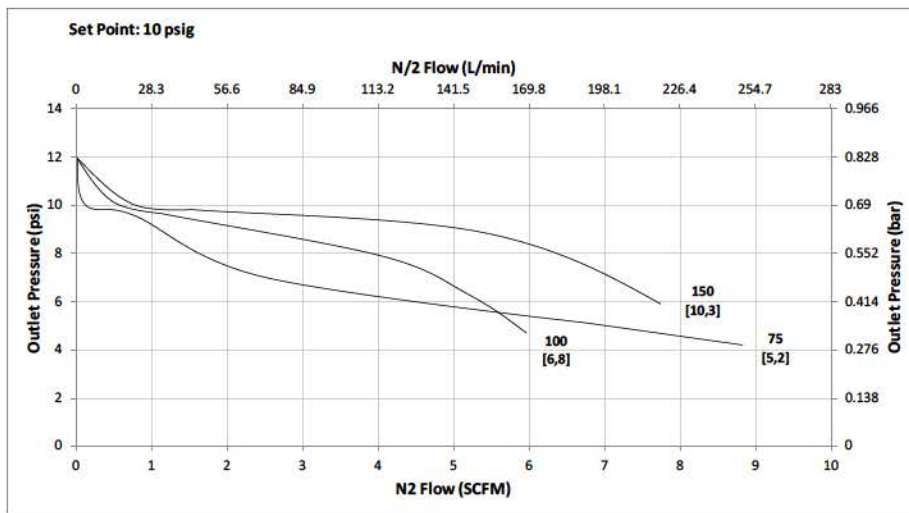
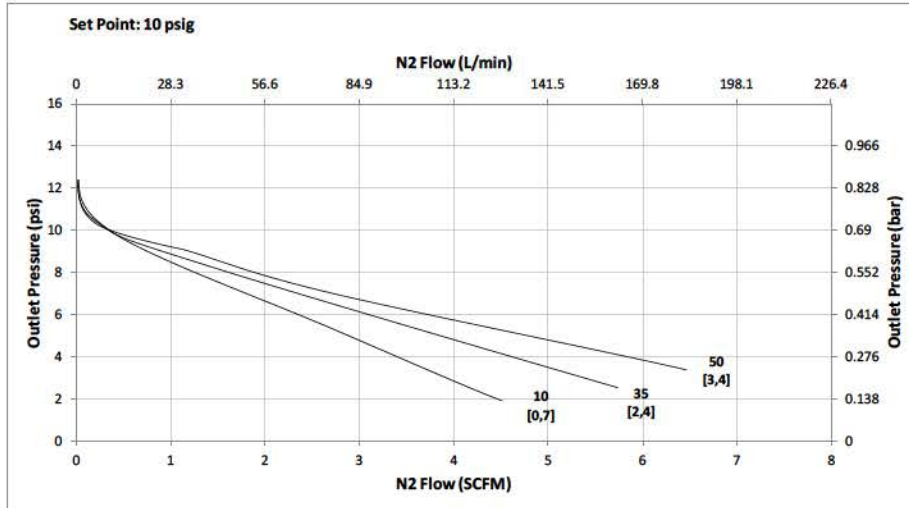
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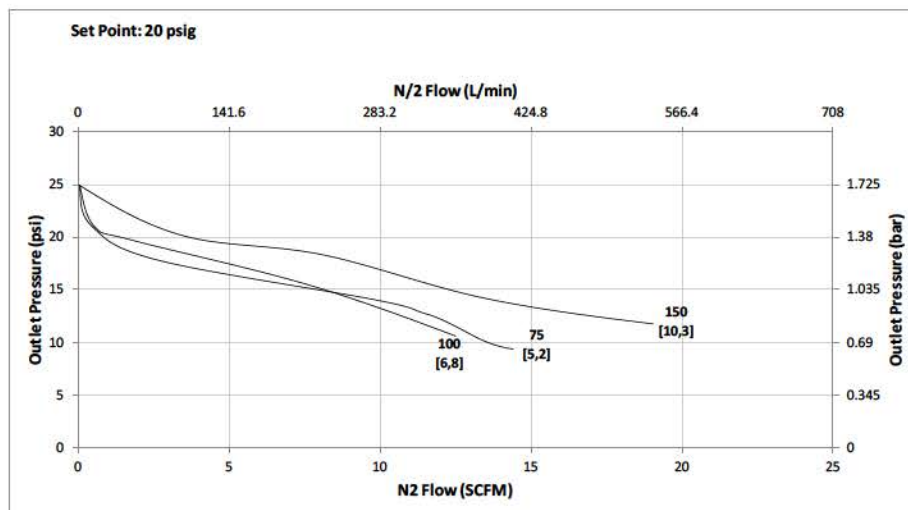
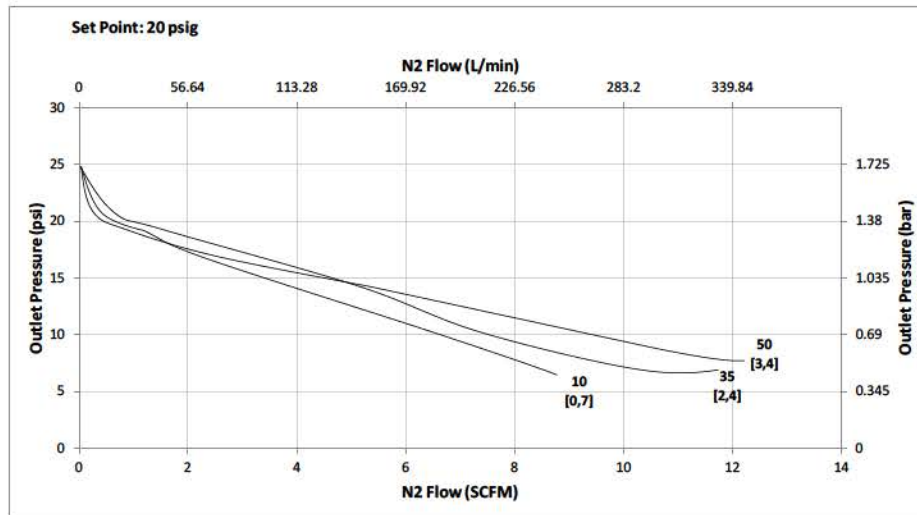
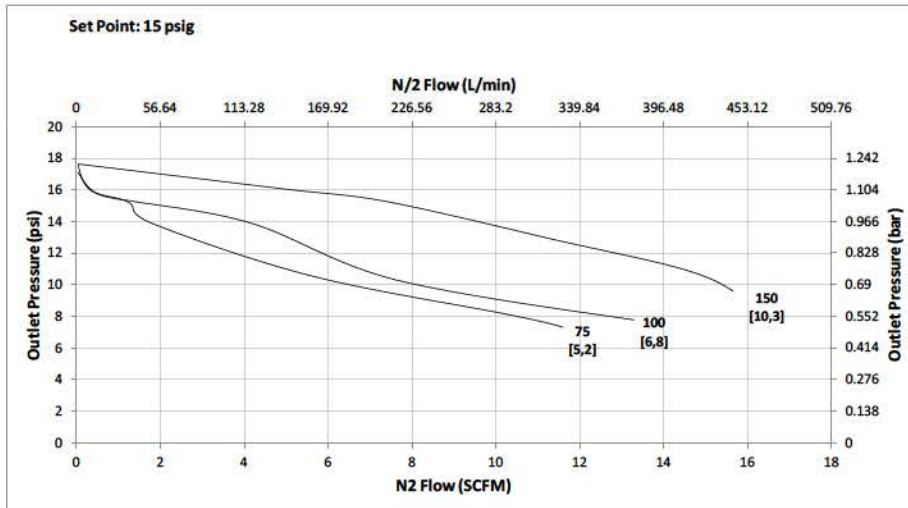
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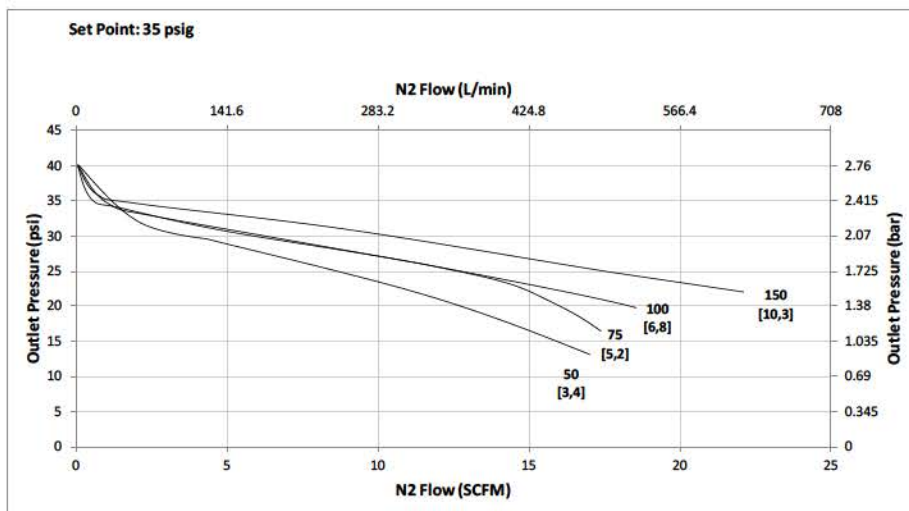
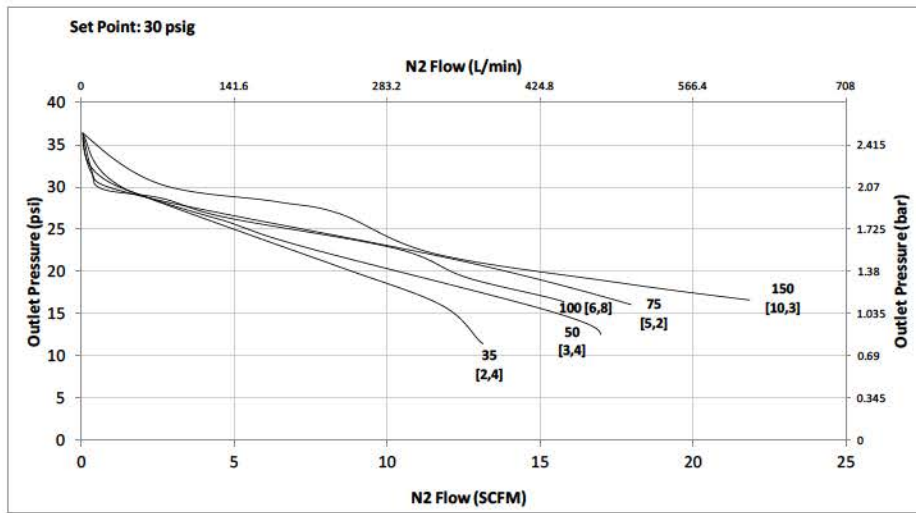
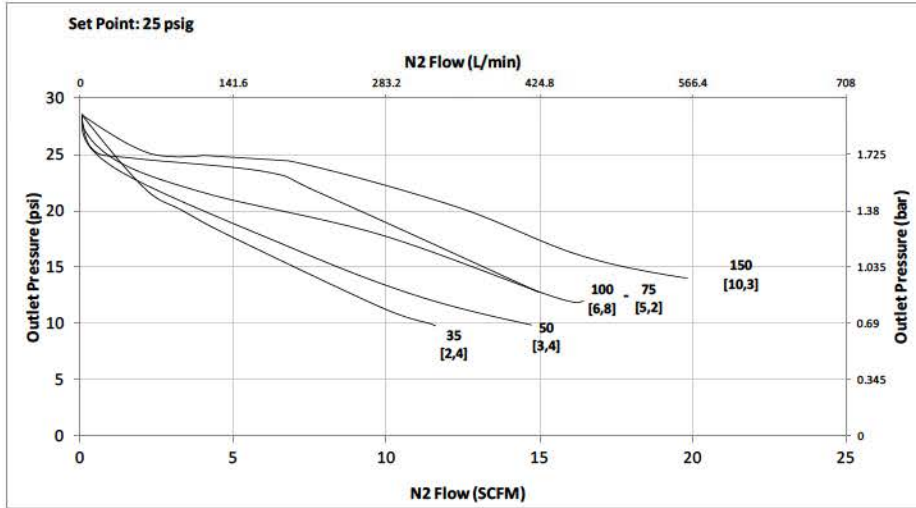
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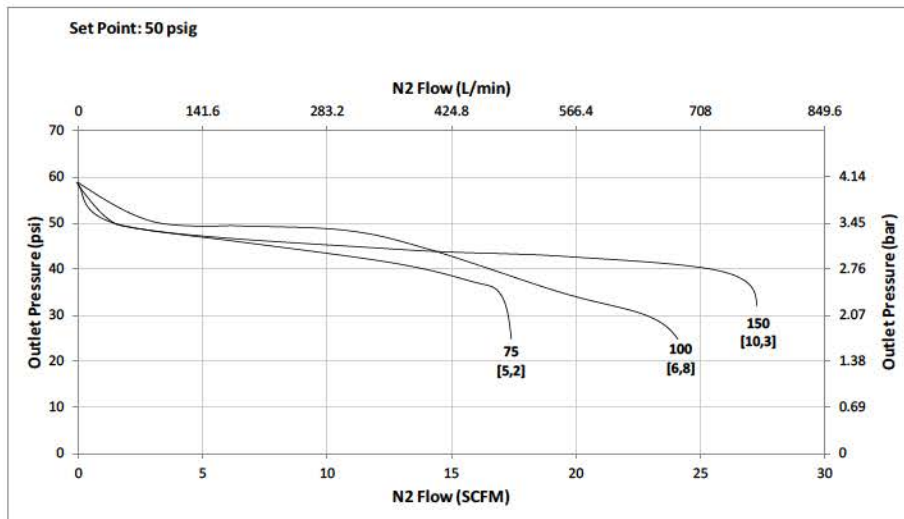
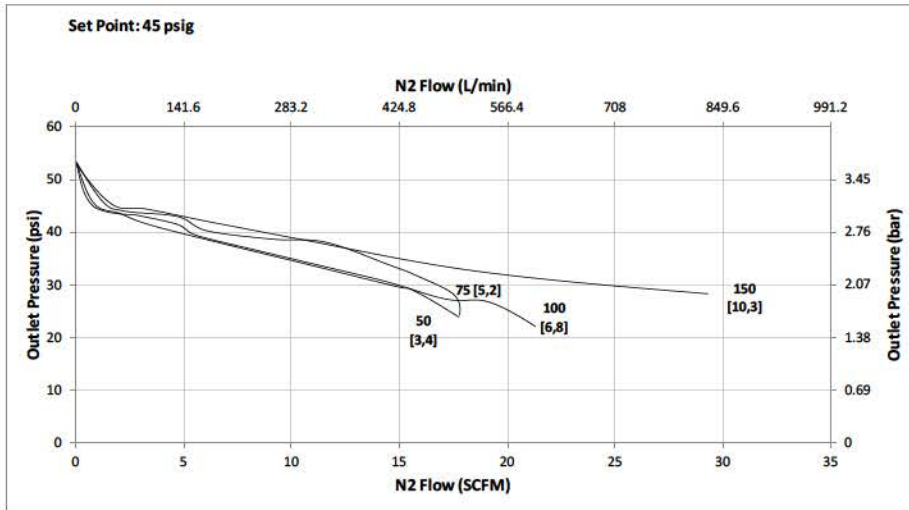
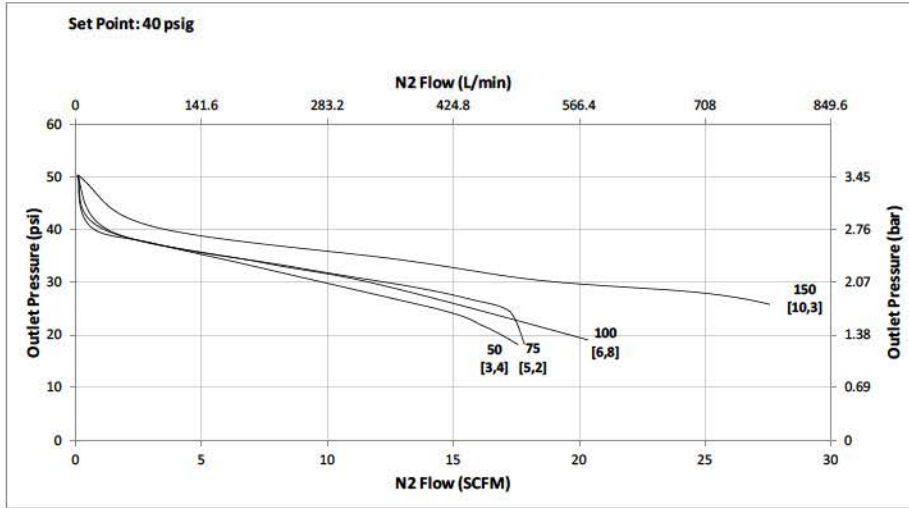
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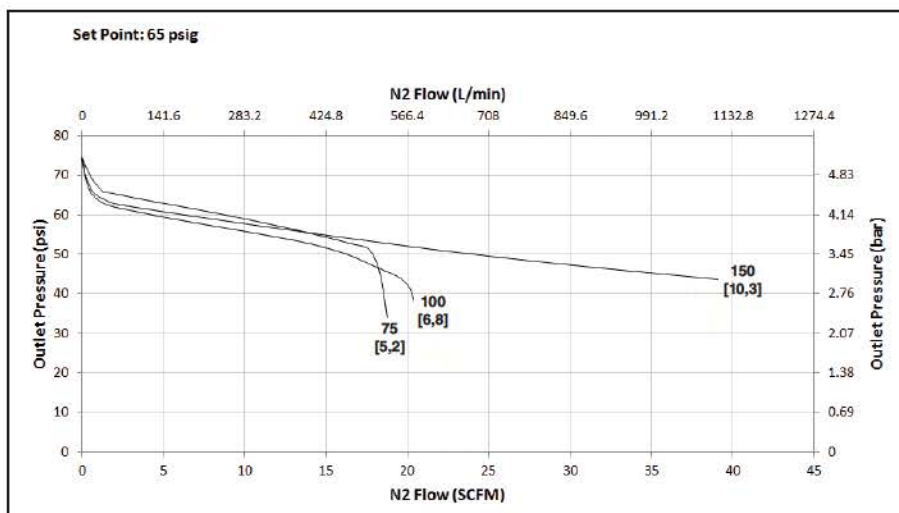
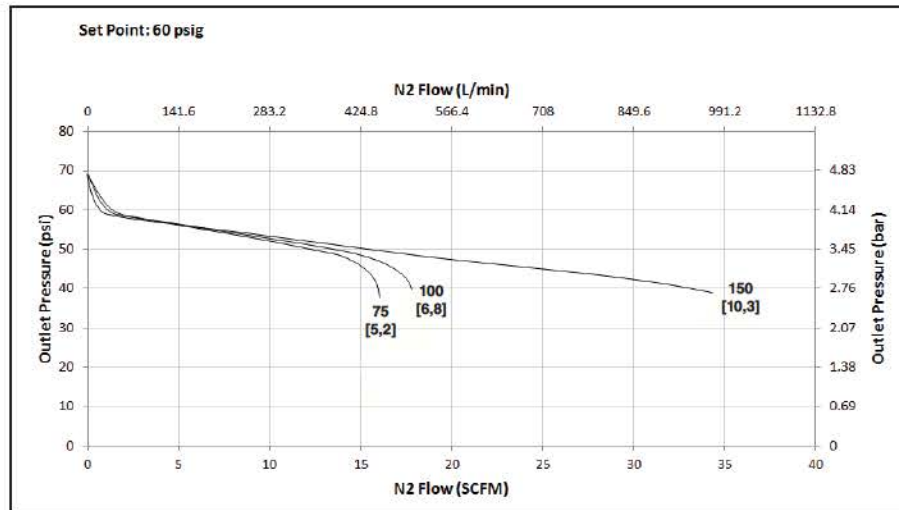
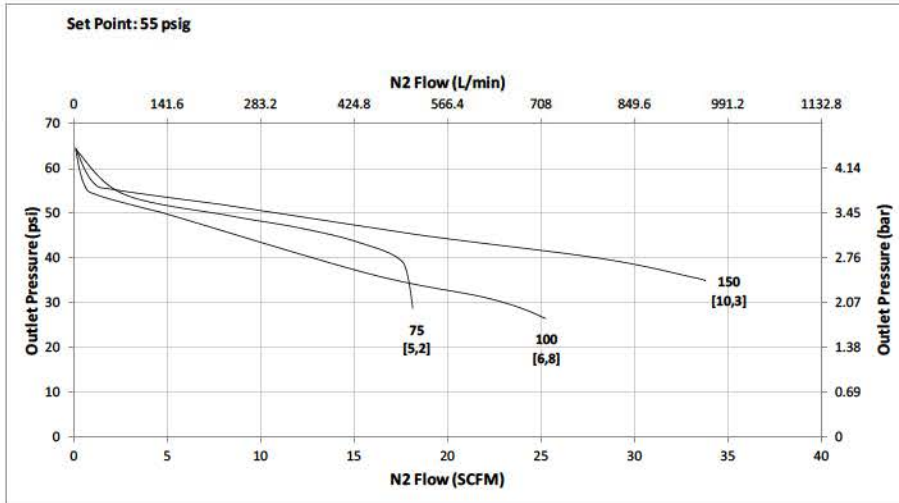
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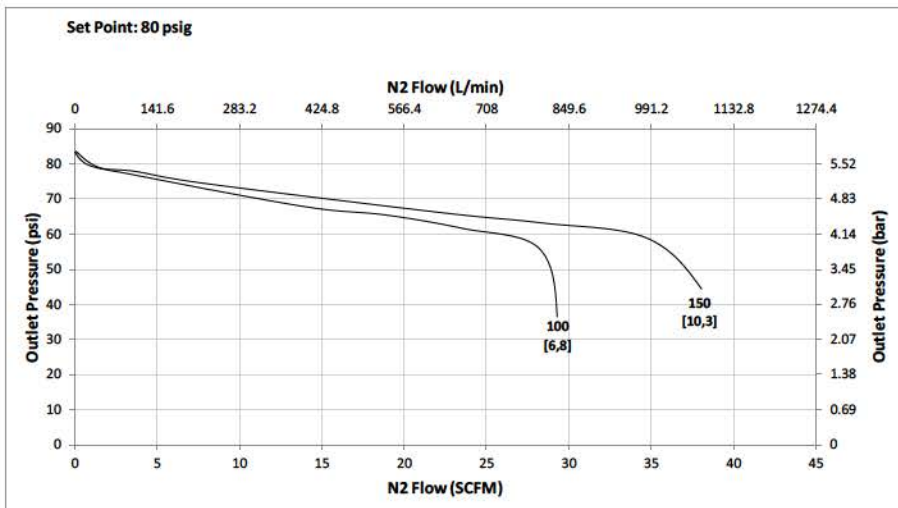
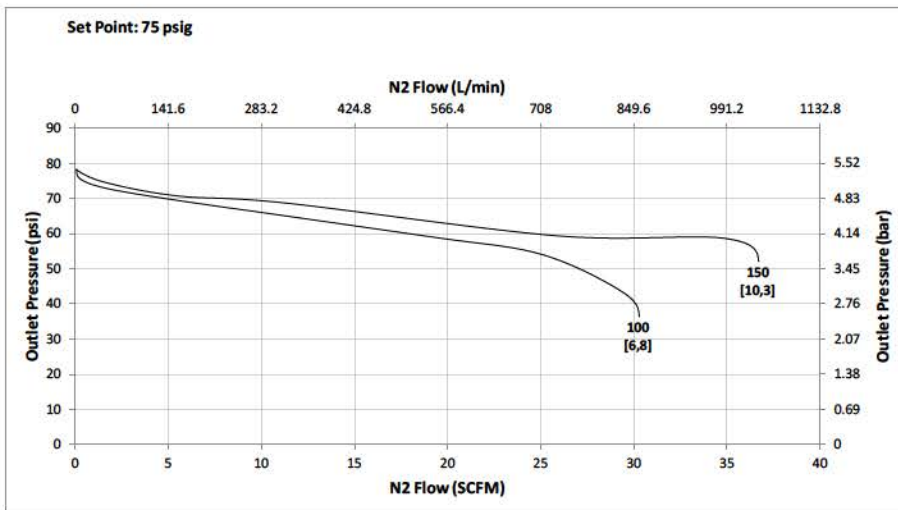
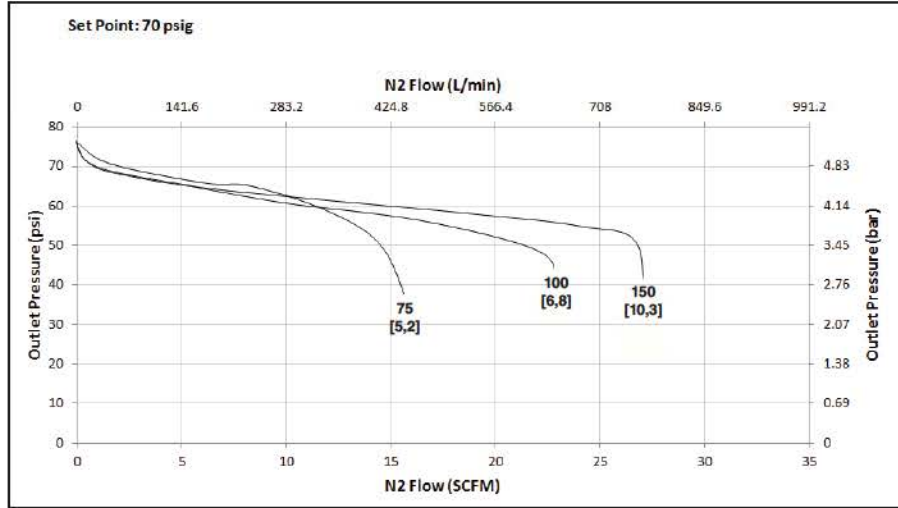
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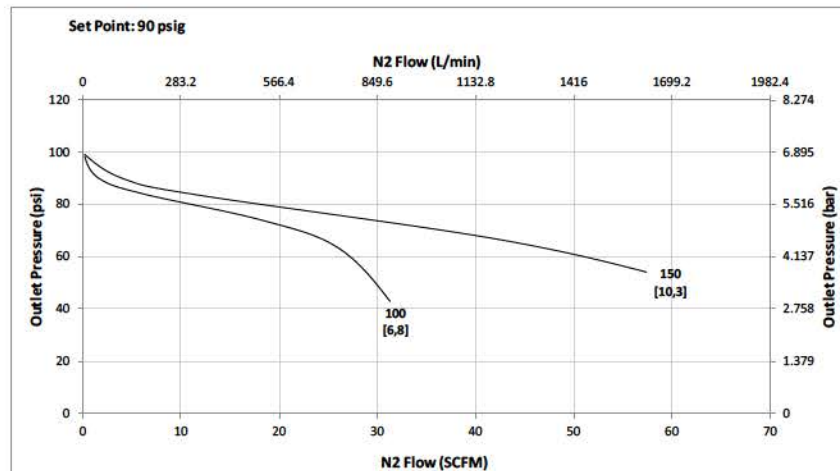
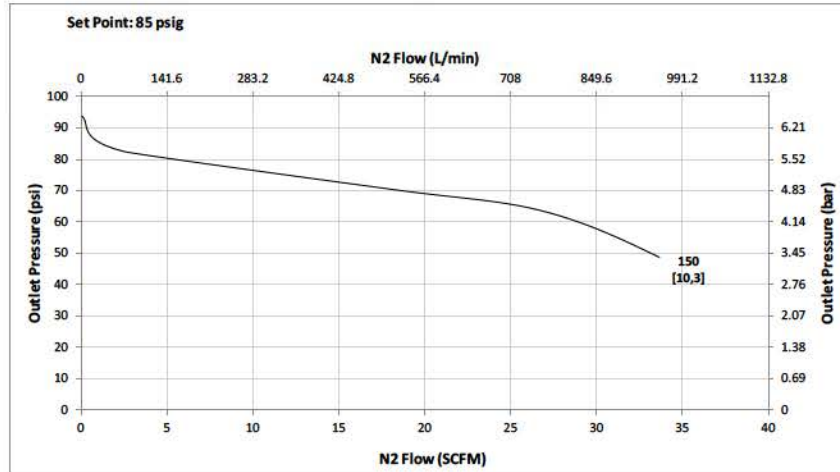
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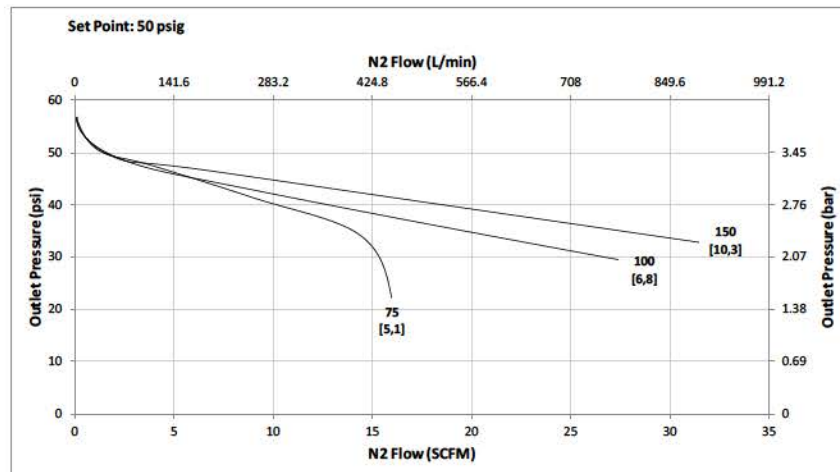
Maximum inlet pressure: 150 psig (10,3 bar)



Flow Coefficient: 0.5

Range Spring: **50 -125 psig** (3,4 - 8,6 bar)

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



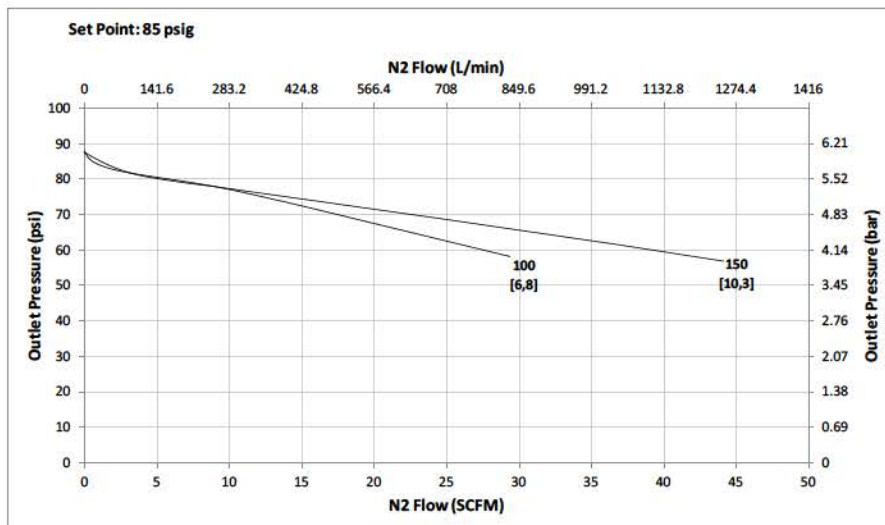
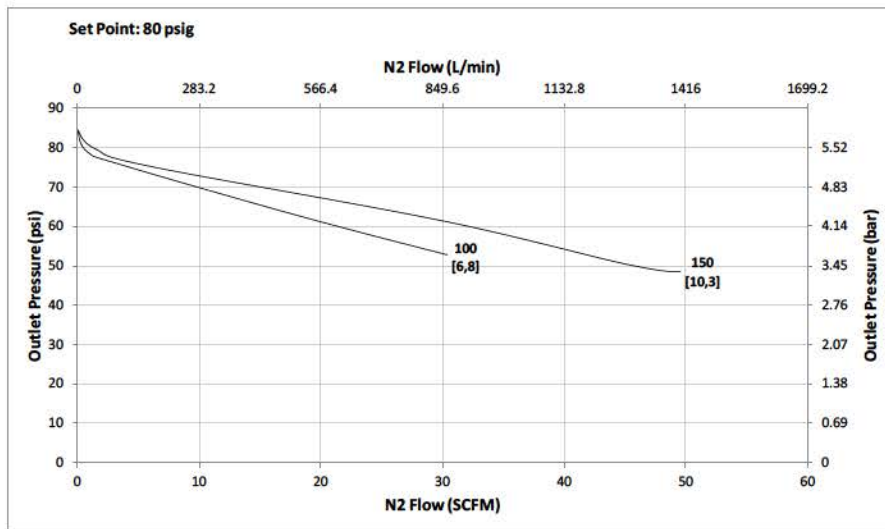
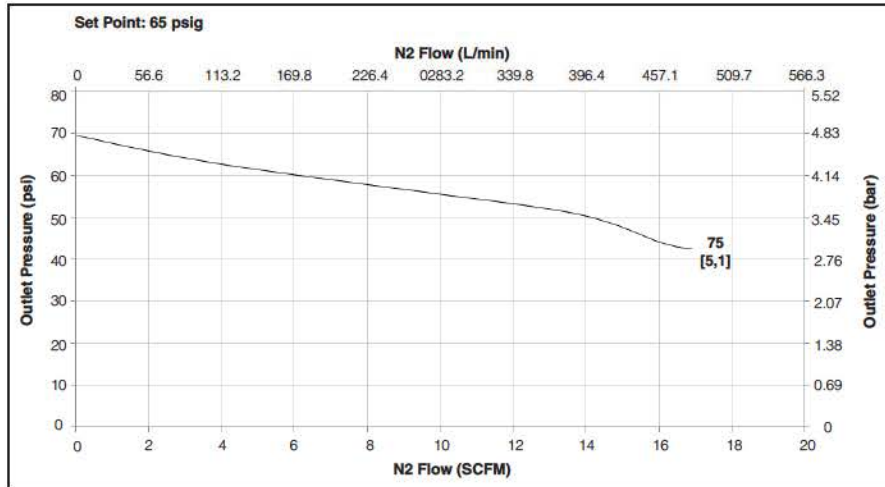
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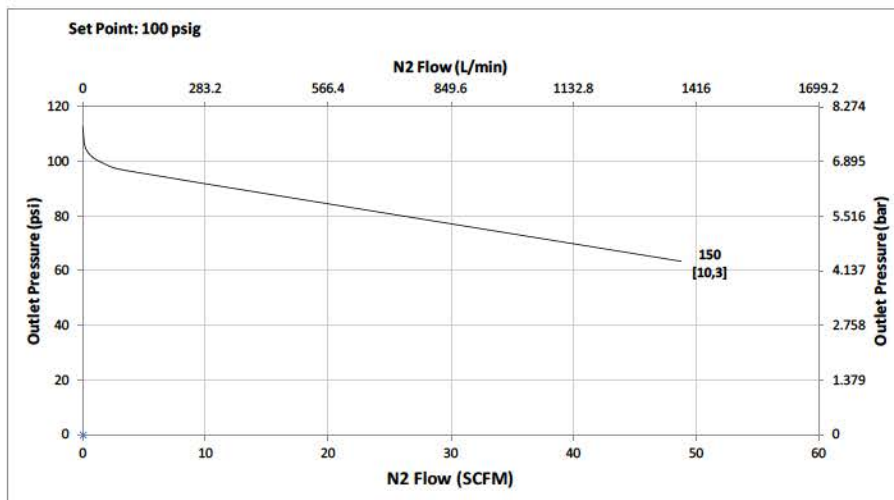
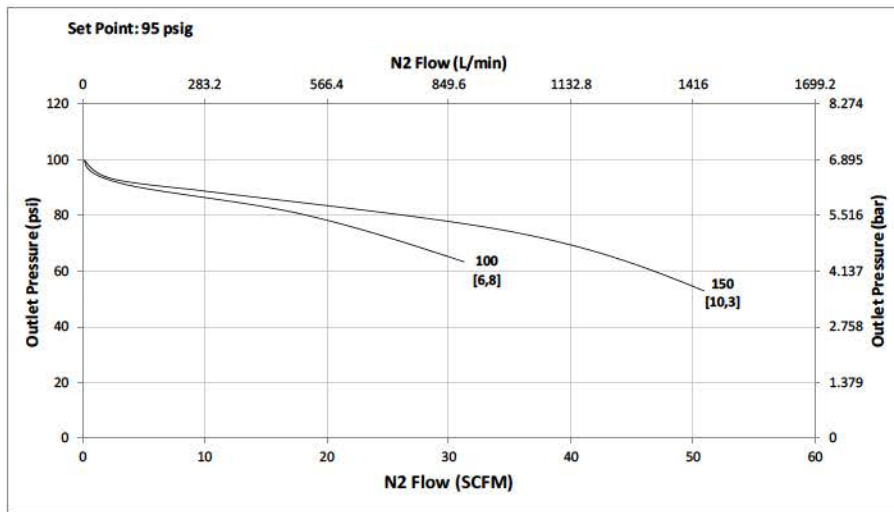
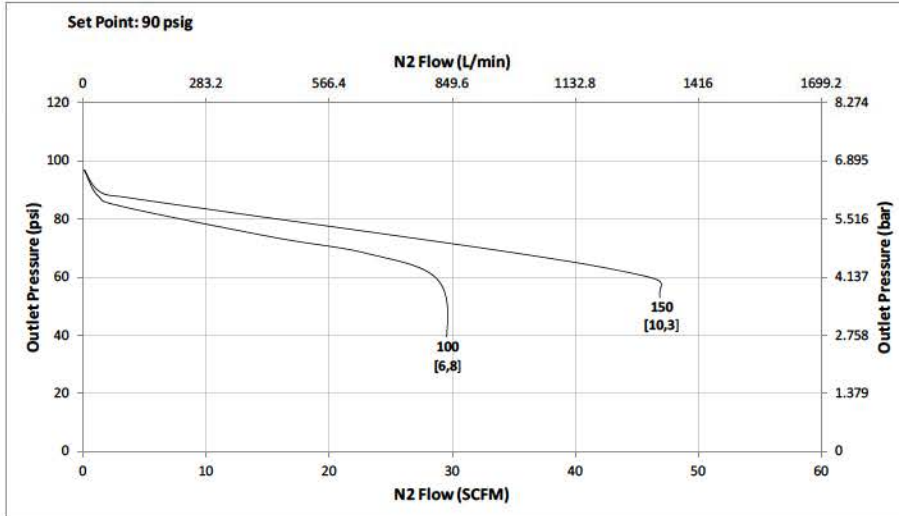
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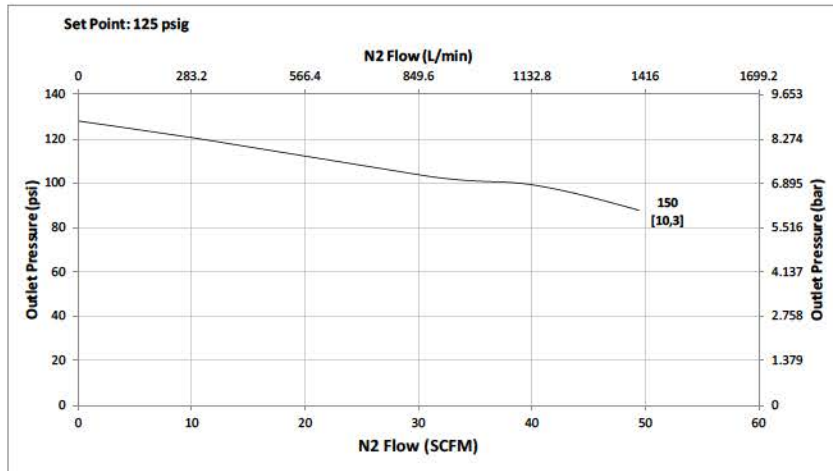
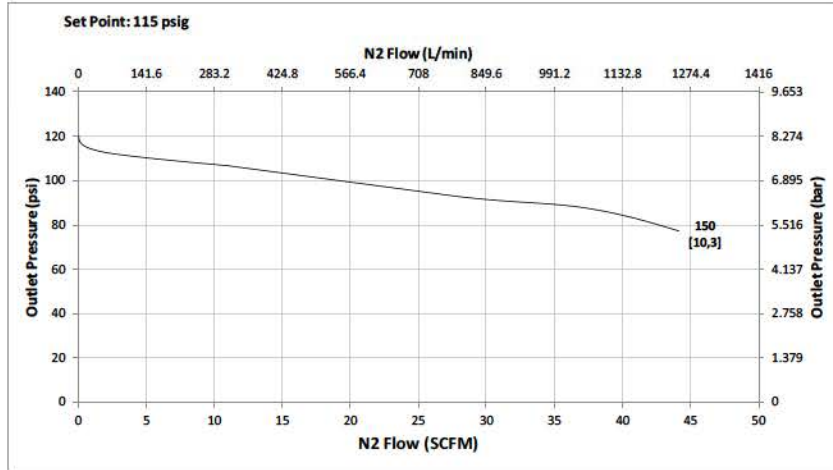
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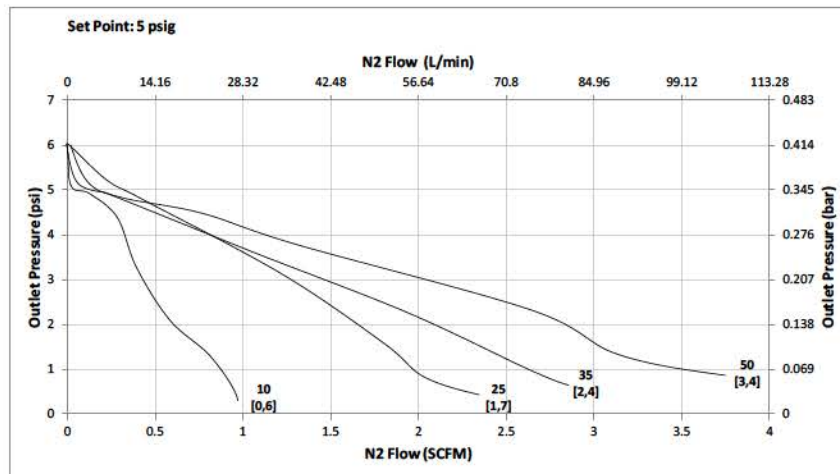
Maximum inlet pressure: 150 psig (10,3 bar)



Flow Coefficient: 0.8

Range Spring: 5 - 90 psig (0,34 - 6,2 bar)

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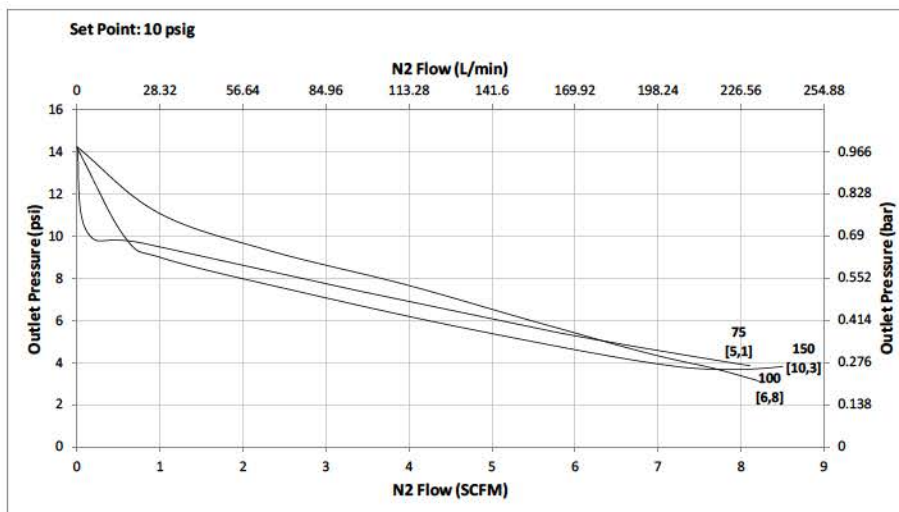
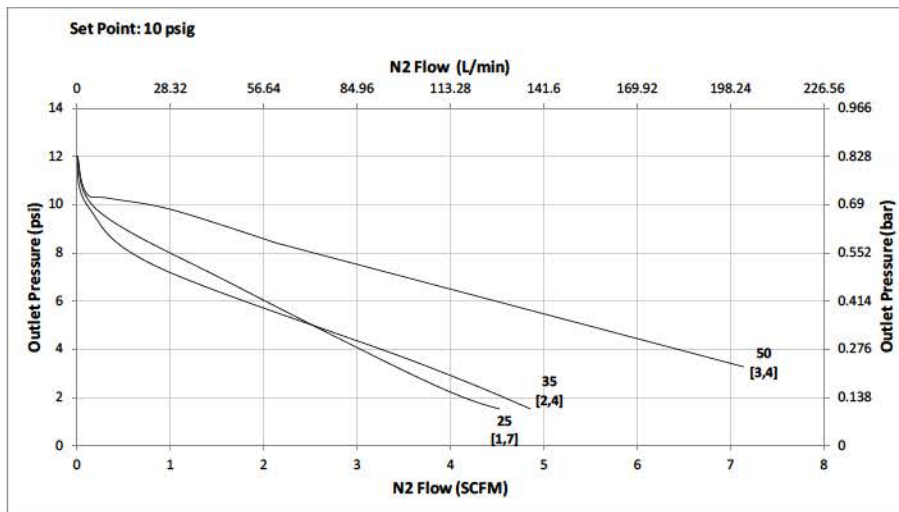
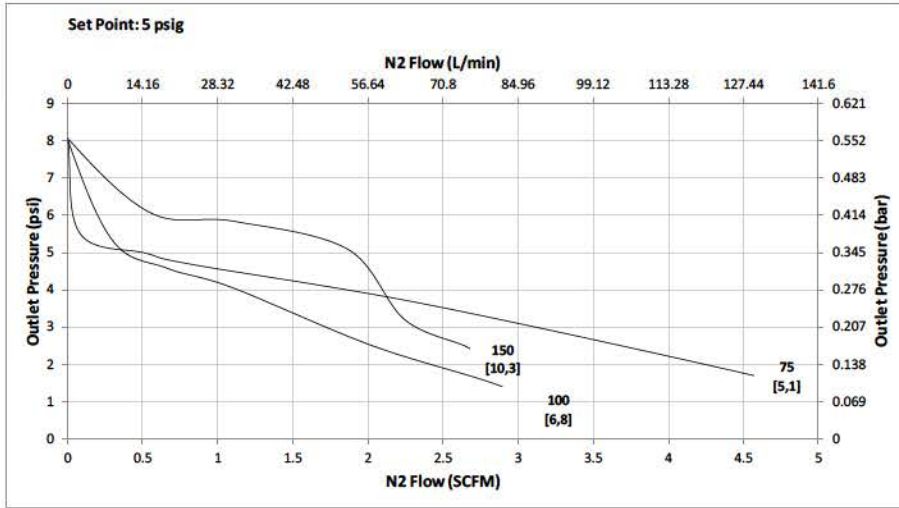
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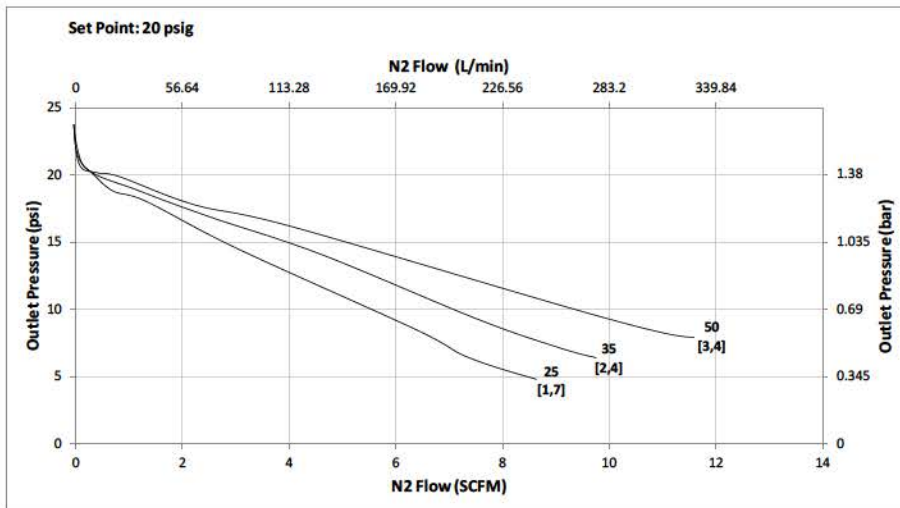
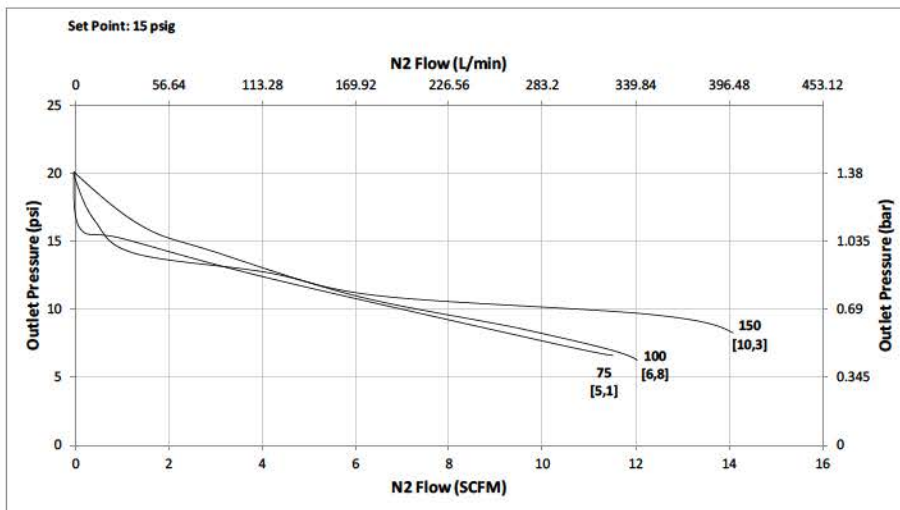
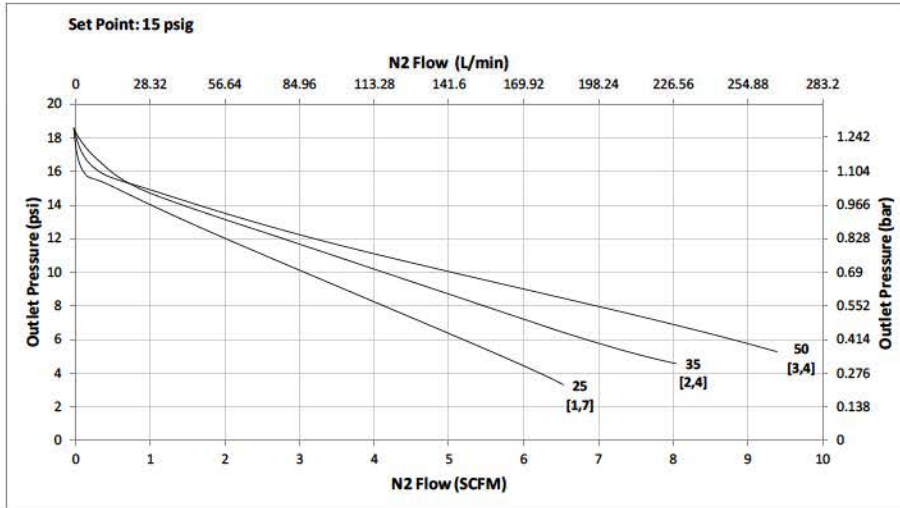
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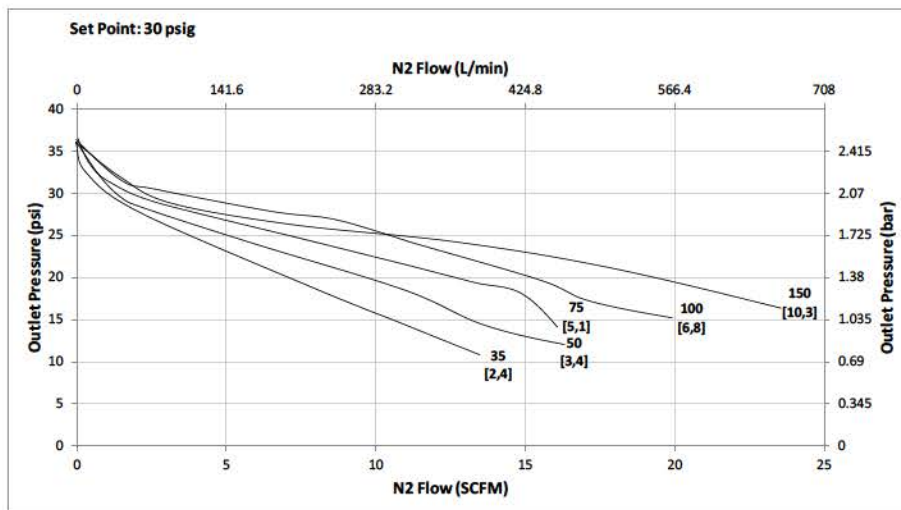
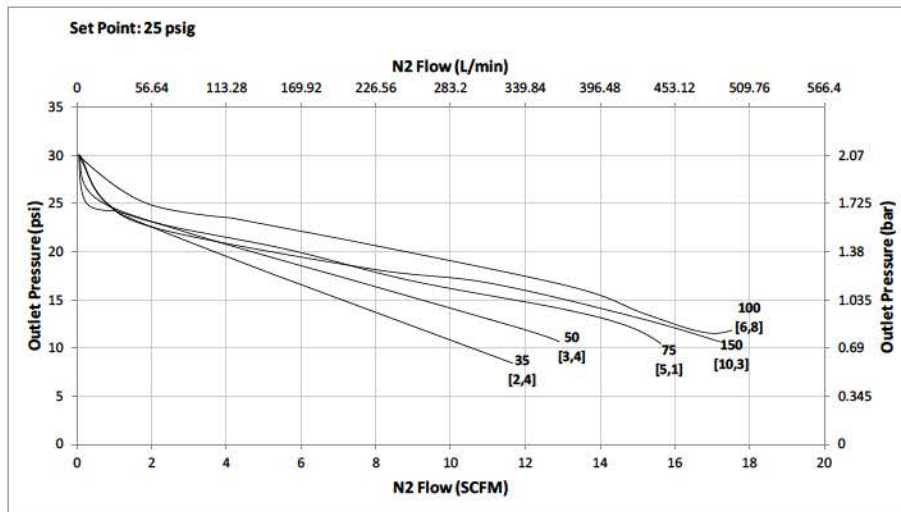
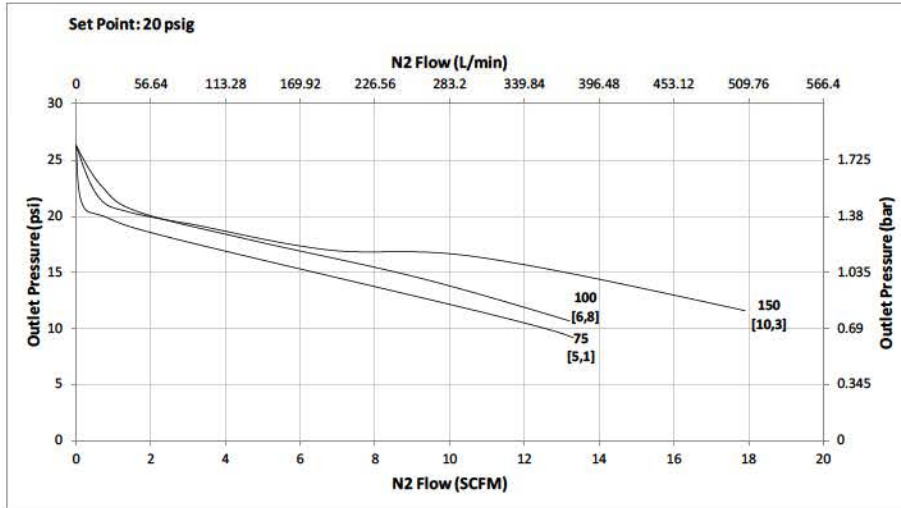
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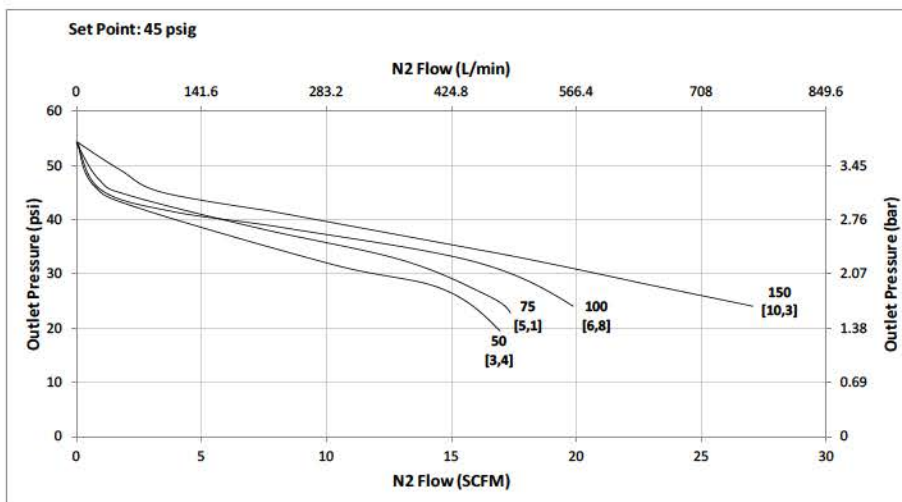
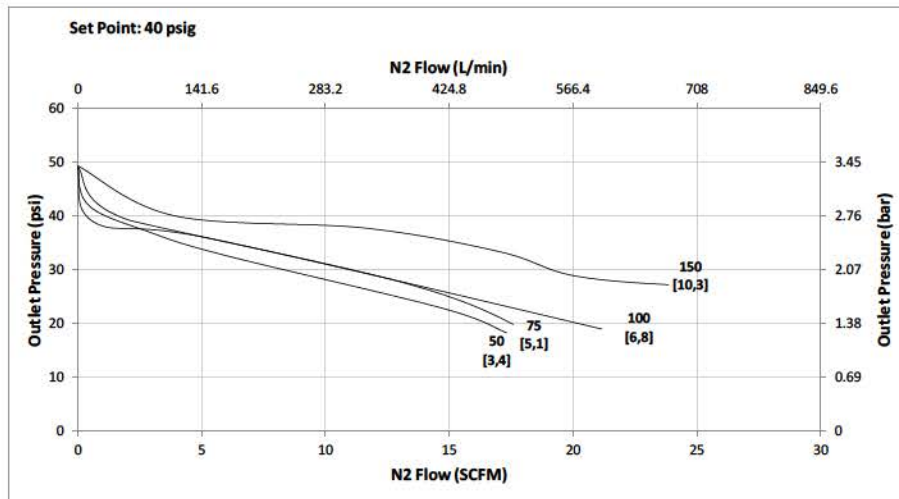
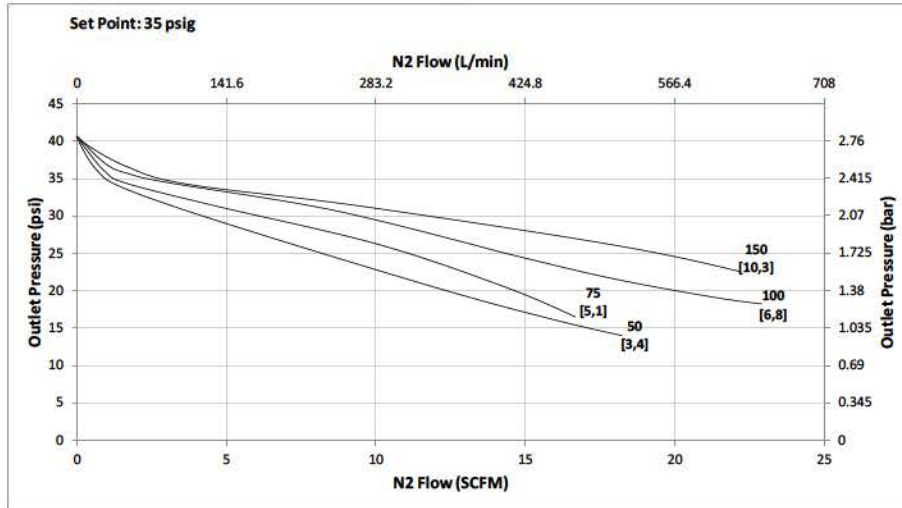
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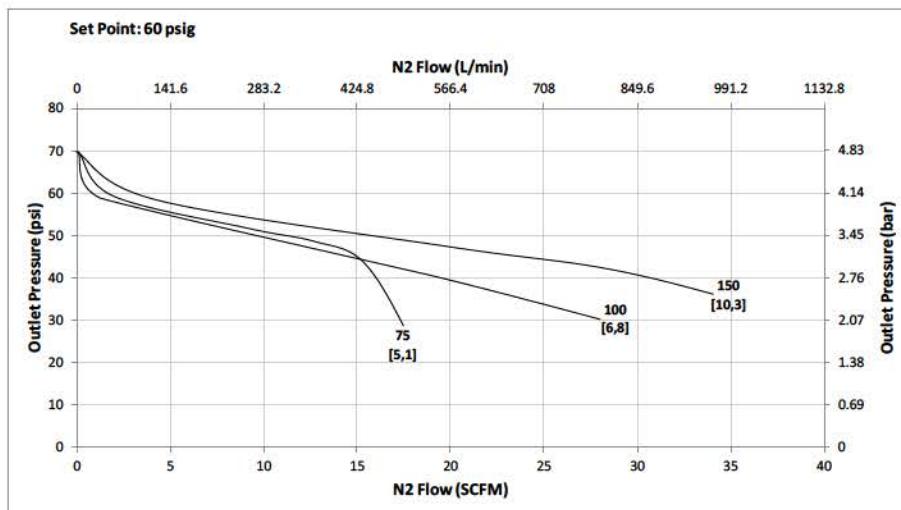
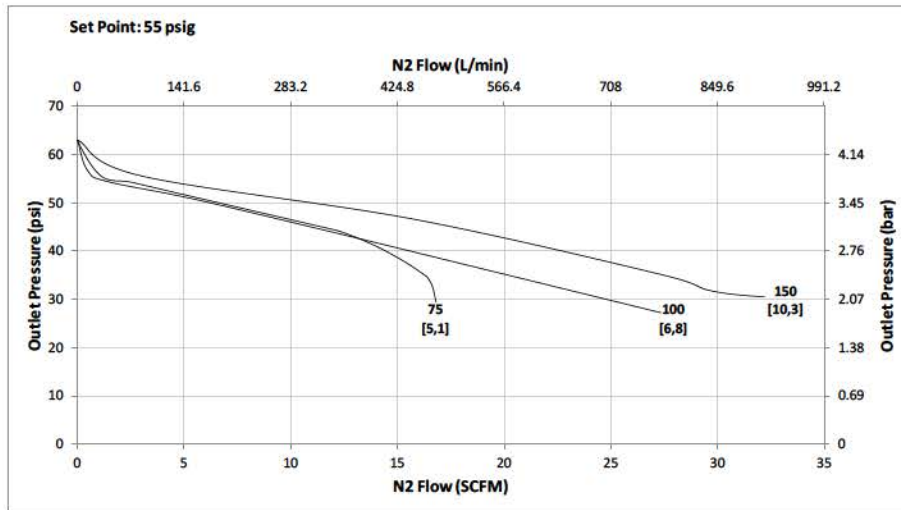
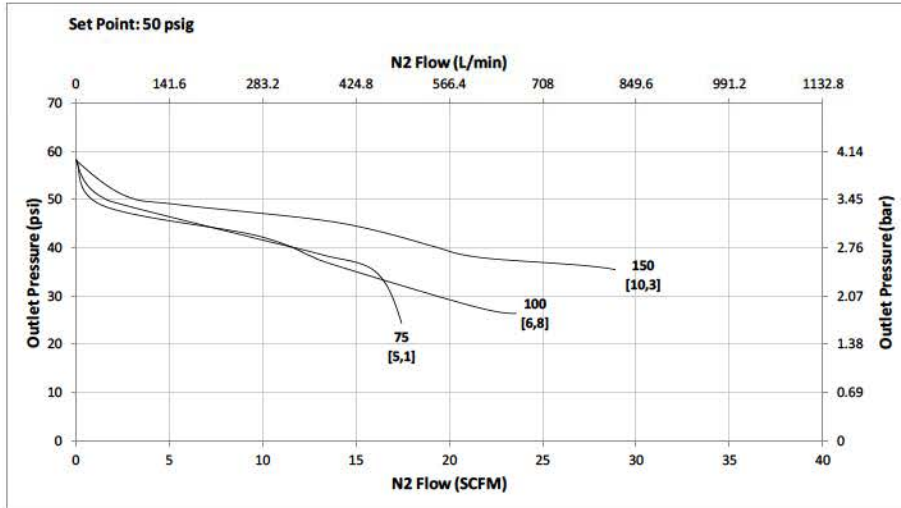
FLOW DATA FOR CV TRIM SELECTION

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: 0.8

Range Spring: 5 -90 psig (0,34 - 6,2 bar)

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



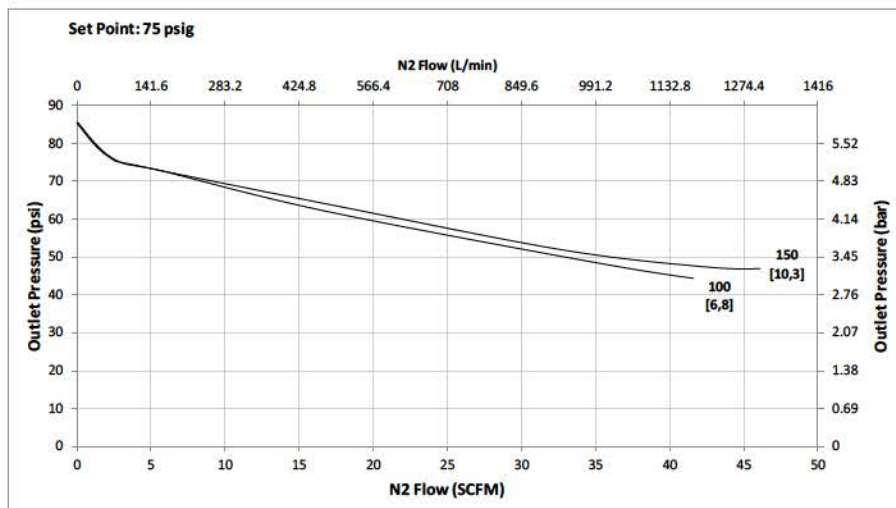
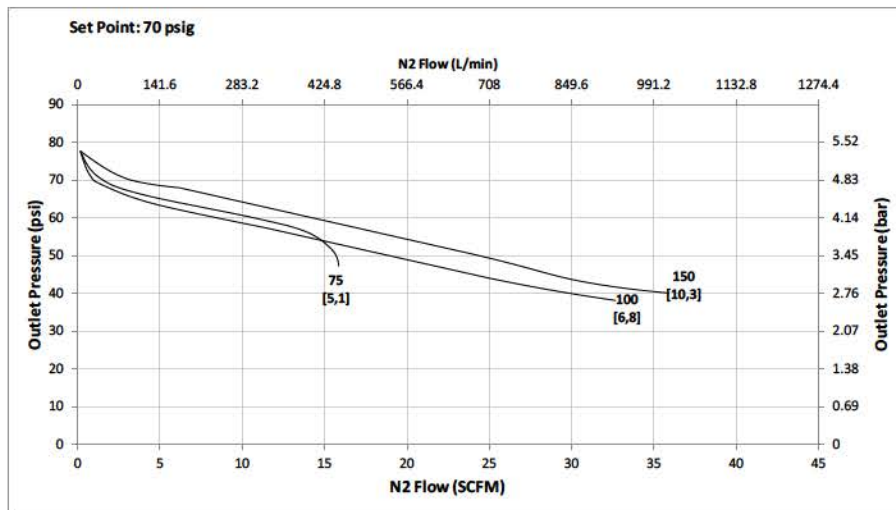
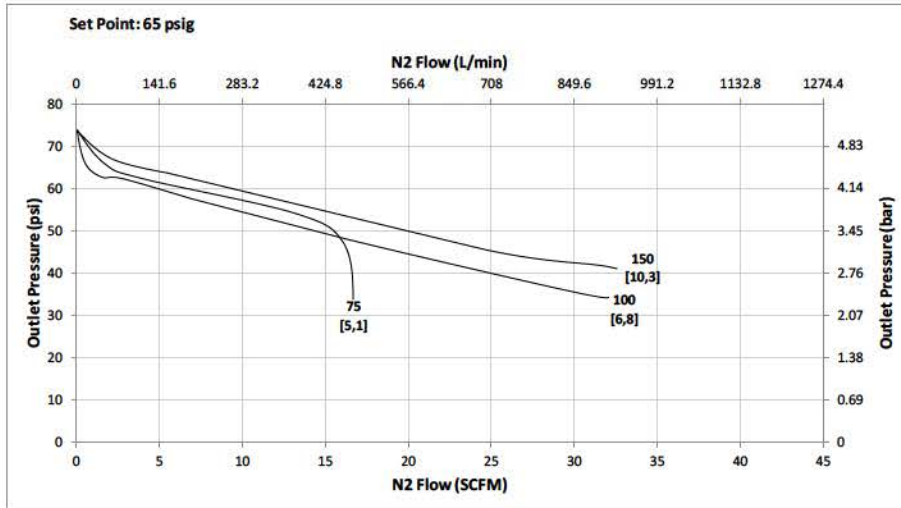
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Flow Coefficient: 0.8

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



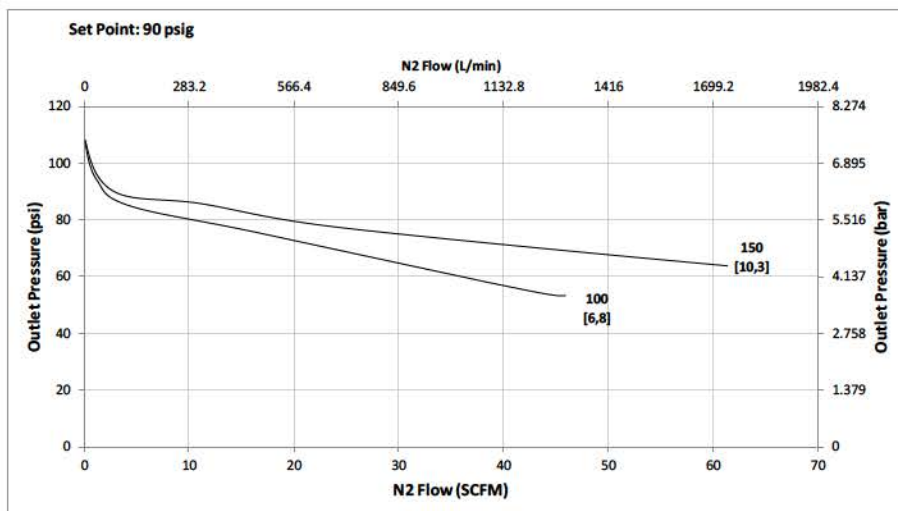
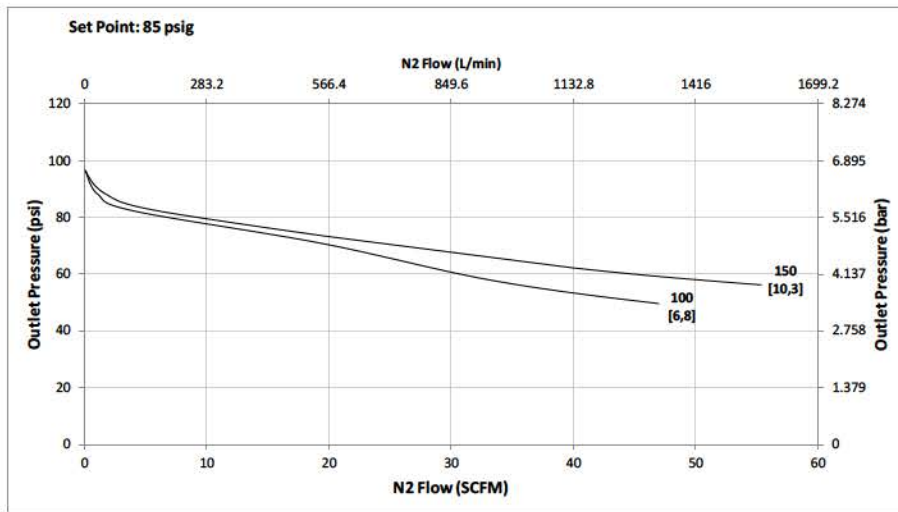
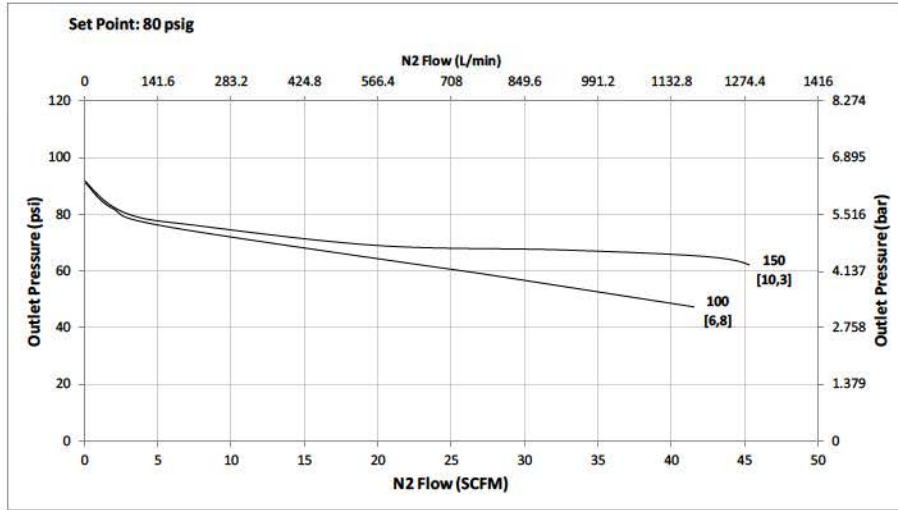
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Flow Coefficient: 0.8

Range Spring: 5 -90 psig (0,34 - 6,2 bar)

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



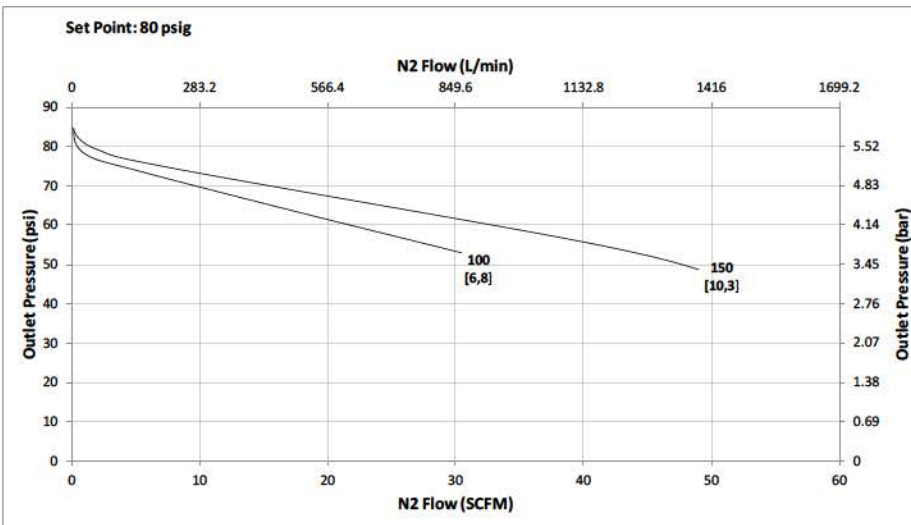
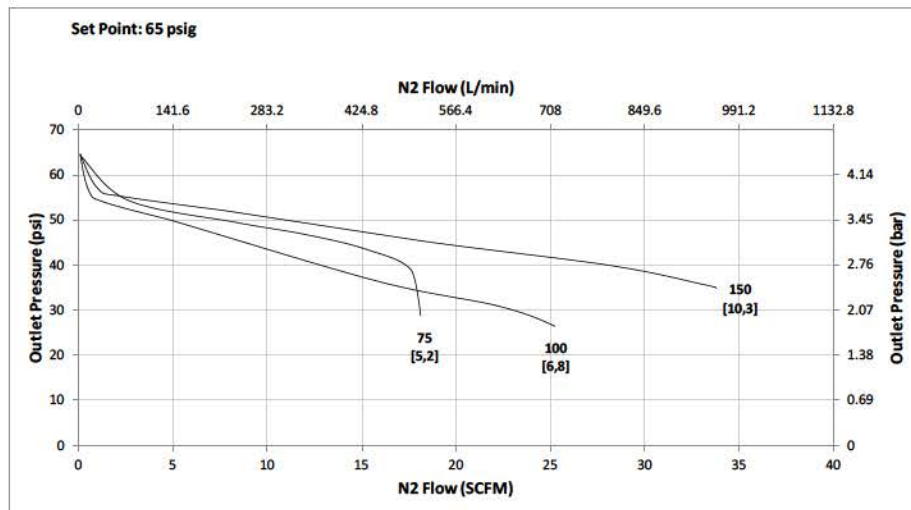
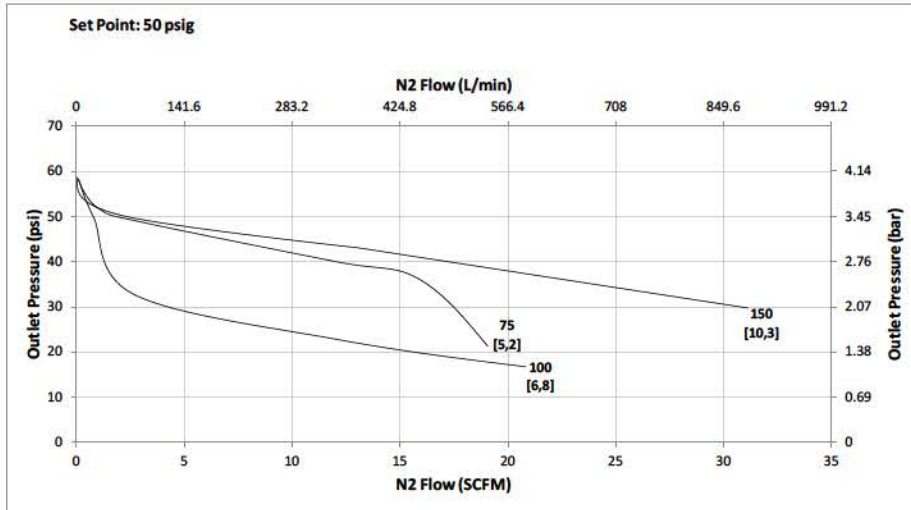
FLOW DATA FOR CV TRIM SELECTION

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: 0.8

Range Spring: **50 -125 psig** (3,4 - 8,6 bar)

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



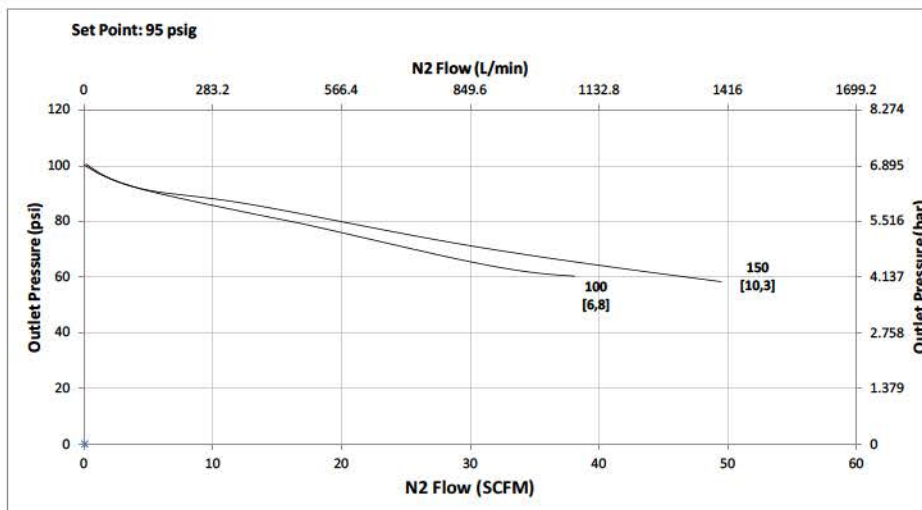
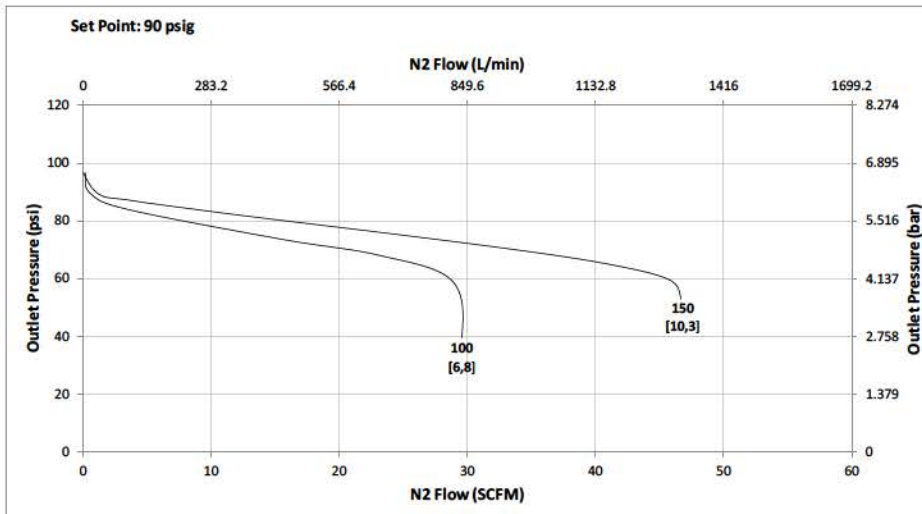
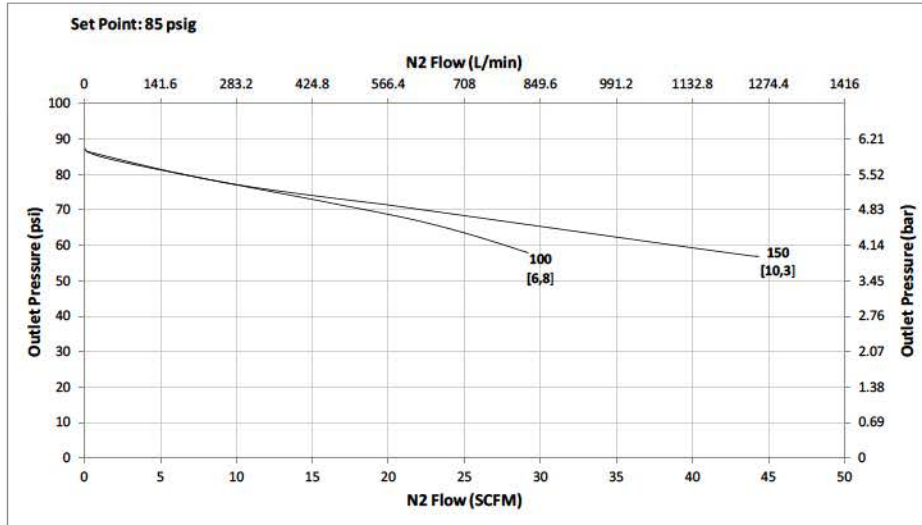
FLOW DATA FOR CV TRIM SELECTION

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: 0.8

Range Spring: 50 -125 psig (3,4 - 8,6 bar)

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



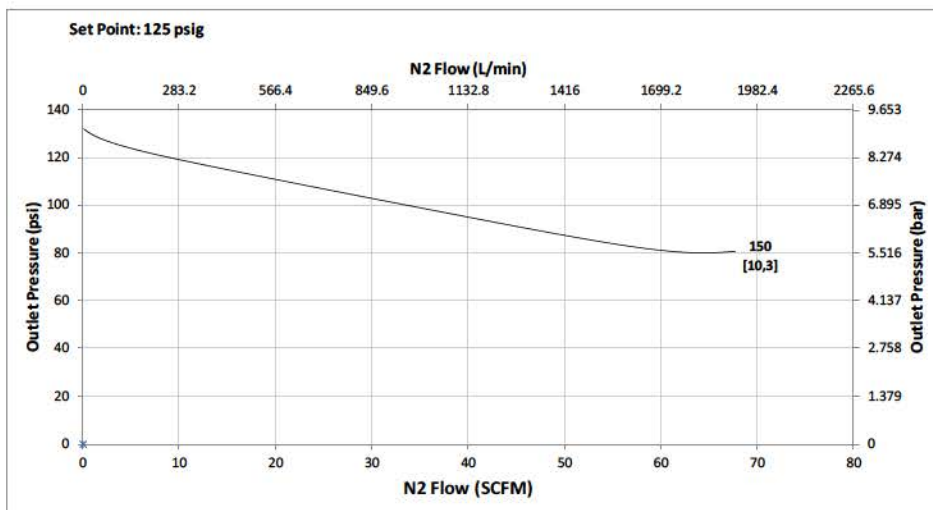
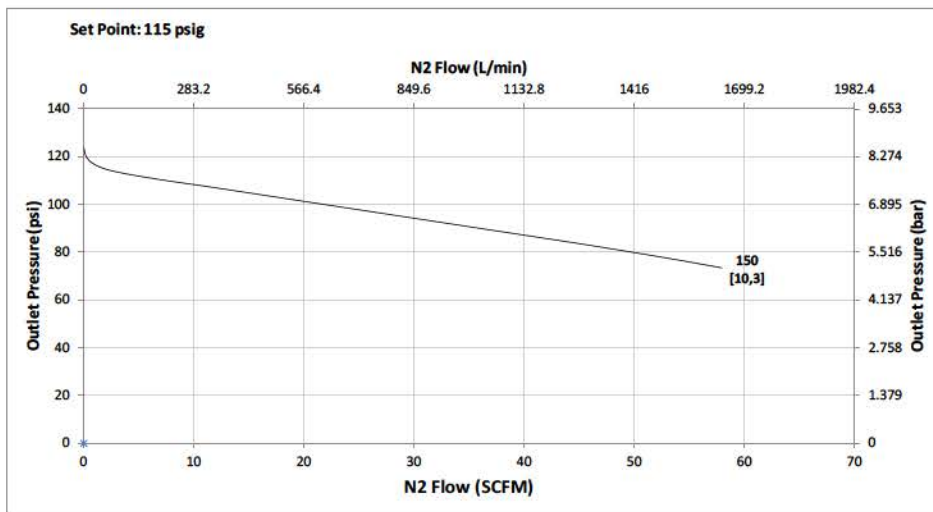
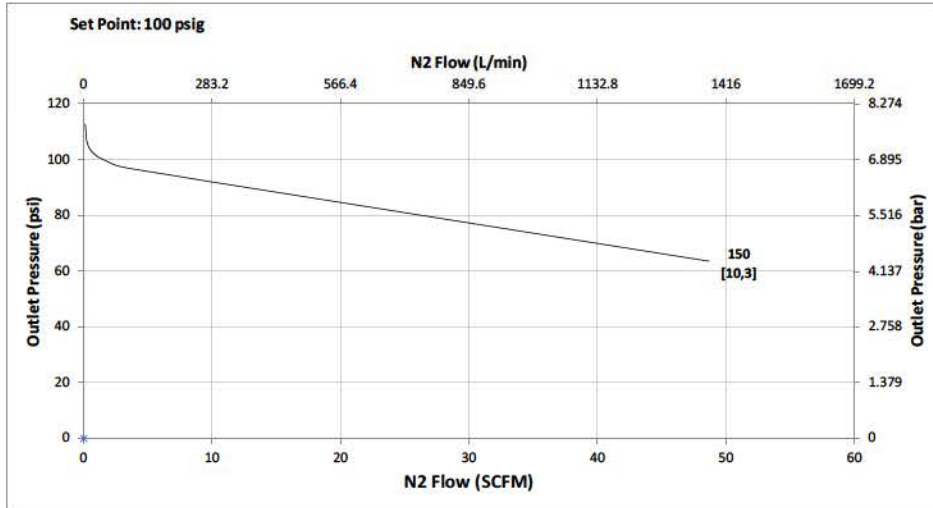
FLOW DATA FOR CV TRIM SELECTION

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: 0.8

Range Spring: 50 -125 psig (3,4 - 8,6 bar)

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



ORDERING SCHEMATIC

Model	Size	Material	1 & 2	3 & 4	5 & 6	7 & 8	9 & 10	11 & 12	13 & 14	15	16	17
JSR	050	6L										

Model	
JSR	High Purity Gas Pressure Reducing Valve

Size	
050	1/2"
075	3/4"

Material	
6L	Stainless Steel 316L

1 & 2	Body Feature	
	End Connection	Port Configuration*
C	Tri-Clamp 20 Ra EP	A Port "A"
P	FNPT 20 Ra EP	B Port "B"
T	ASME BPE BWE 20 Ra EP	C Port "C"
S ¹	ISO Tri-Clamp, DN15	D Port "D"
V ¹	ISO w/34.0mm face T-Clamp, DN15	E Port "E"
R ¹	ISO T-Clamp, DN20	
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	
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. See dimensions, page 3

³ Acc. to DIN 11866, DIN 11850 Row A

⁴ Acc. to DIN 11866 Row B

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

3 & 4	Trim
1S	0.8 Cv
2S	0.5 Cv
1R	CV 0.8 Self-Relieving
2R	Cv 0.5 Self-Relieving
ZZ	Non-Standard

5 & 6	Seat Material
TF	PTFE
PK	Peek
EP	EPDM
ZZ	Non-Standard

7 & 8	Range Spring/Outlet Pressure
05	5 - 70 PSI
0B	15 - 90 PSI
50	50 - 125 PSI
ZZ	Non-Standard

9 & 10	Diaphragm Material
JL	Jorlon
ZZ	Non-Standard

11 & 12	Actuator
SK	Standard Actuator
AK	Standard Actuator / Autoclavable Anod. Aluminum knob
PM	Panel Mount
CV	Captured Vent
TP	Anti-tamper feature (See illustration page 3)
ZZ	Non-Standard

13 & 14	Inlet Gauge*
ØB	0 - 30 PSIG/Bar (Dual)
ØC	0 - 60 PSIG/Bar (Dual)
ØD	0 - 100 PSIG/Bar (Dual)
ØE	0 - 160 PSIG/Bar (Dual)
ØF	0 - 200 PSIG/Bar (Dual)
ØN	None
ZZ	Non-Standard

* Gauges are Oil Free and O2 clean as standard.

15	Outlet Gauge*
B	0 - 30 PSIG/Bar (Dual)
C	0 - 60 PSIG/Bar (Dual)
D	0 - 100 PSIG/Bar (Dual)
E	0-160 PSIG/Bar (Dual)
N	None
ZZ	Non-Standard

* Gauges are Oil Free and O2 clean as standard.

16	SEP Compliance
0	None Required
G	SEP Compliant
Z	Non-Standard

17	Accessories
0	None Required
S	Clean For Oil Free
X	Clean for Oxygen*
Z	Non-Standard

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

REPAIR KIT ORDERING SCHEMATIC

Model		Size		Material		Kit		1&2	3&4
JSR	—	050	—	6L	—	Kit	/	1P	SJ

Model	
JSR	High Purity Gas Pressure Reducing Valve

Size	
050	1/2"
075	3/4"

Material	
6L	Stainless Steel 316L

Kit	
Kit	Repair Kit

1 & 2	Trim/Seat Material
1P	Cv 0.8/PEEK
1T	Cv 0.8/PTFE
1E	Cv 0.8/EPDM
2P	Cv 0.5/PEEK
2T	Cv 0.5/PTFE
2E	Cv 0.5/EPDM
ZZ	Non-Standard

3 & 4	Diaphragm Assembly
RJ	Self Relieving/Jorlon
SJ	Standard/Jorlon
ZZ	Non-Standard



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