



Technical Standards and Safety Authority
345 Carlingview Drive
Toronto, Ontario M9W 6N9
www.tssa.org

Show facsimile of manufacturer's logo or trademark, as it will appear on the fitting, in the space below

GENERANT
Butler, NJ

STATUTORY DECLARATION Registration of Fittings

I, James Lesky, Director of Quality Assurance,
(Name and Position, e.g. President, Plant Manager, Chief Engineer)

of Generant Company, Inc.
(Name of Manufacturer)

Located at 1865 Rt. 23 South, P.O. Box 768, Butler, NJ 07405 973-838-6500 973-838-4888
(Plant Address) (Telephone No.) (Fax No.)

do solemnly declare that the fittings listed hereunder, which are subject to the **Technical Standards and Safety Act**, Boilers and Pressure Vessels Regulation, comply with all of the requirements of ASME B31.3 Process Piping Code

(Title of recognized North American Standard)

which specifies the dimensions, materials of construction, pressure/temperature ratings, identification marking the fittings and service;

or are not covered by the provisions of a recognized North American standard and are therefore manufactured to comply with _____ as supported by the attached data which identifies the dimensions, material of construction, pressure/temperature ratings and the basis for such ratings, the marking of the fitting for identification and service.

I further declare that the manufacture of these fittings is controlled by a quality system meeting the requirements of ISO 9001 which has been verified by the following authority, Kiwa

The items covered by this declaration, for which I seek registration, are category "C" type fittings. In support of this application, the following information and/or test data are attached as follows:

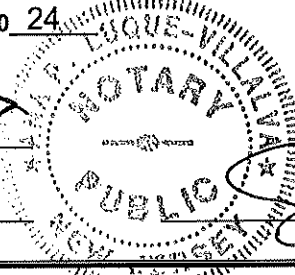
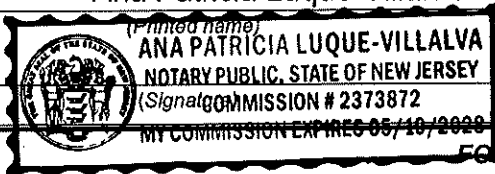
ISO 9001:2008 Certificate, Series GDR Gas Delivery Regulator tests, drawings, BOM's, design calculations.
(drawings, calculations, test reports, etc.)

Declared before me at Generant Company, Inc. in the _____ State of New Jersey

the 27 day of March AD 20 24

Commissioner for Oaths:

Ana Patricia Luque-Villalva



(Signature of Declarer)

FOR OFFICE USE ONLY

To the best of my knowledge and belief, the application meets the requirements of the **Technical Standards and Safety Act**, Boilers and Pressure Vessels Regulation, and CSA Standard B51 and is accepted for registration in Category C

CRN: _____
Registered by: _____
Dated: _____



This Document has been digitally signed and approved. The stamp size has been optimized for 11 x 17 documents.

Technical Standards and Safety Authority
Boilers and Pressure Vessels Safety Program

REGISTERED

C.R.N.: 0C19060.5R1

Signed:

Date: May 3, 2024.

NOTE: This registration expires on: **May 3, 2024**



CRN Scope of Registration: Series GDR (Gas Delivery Regulator)

THIS IS PART OF CRN
0C19060.5R1
Technical Standards and Safety Authority
Boilers and Pressure Vessels Safety
Program

Series	ASME Design Standard	Size Range	Spring Models	Main Pressure Bearing Element Material	Operating Temperature Range	Inlet MAWP @ Max Temp	Inlet MAWP Burst Test Report	Outlet MAWP @ Max Temp	Outlet MAWP Burst Test Report
GDR-500	B31.3	1/4", 3/8", 1/2" NPT 1/4", 1/2" BSPT	A, B, C	C37700, CW617N ASTM B283 Forged Brass	-60°F to 225°F	580 PSIG	Hydrostatic Test Report: 4GDR-500B-V-B INLET CHAMBER & Rationale for Increasing GDR-500 Max Inlet to 580 PSI	225 PSIG @ 225°F	Hydrostatic Test Report: 4GDR-500B-V-B OUTLET CHAMBER
GDR-500	B31.3	1/4", 3/8", 1/2" NPT 1/4", 1/2" BSPT	D			580 PSIG	Hydrostatic Test Report: 4GDR-500B-V-D OUTLET CHAMBER		
GDR-500	B31.3	1/4", 3/8", 1/2" NPT 1/4", 1/2" BSPT	Pilot Operated			580 PSIG	Hydrostatic Test Report: 4GDR-500B-V-D OUTLET CHAMBER **		
GDR-1000	B31.3	3/4", 1" NPT 3/4", 1" BSPT	A, B, C			580 PSIG	Hydrostatic Test Report: GDR-1000 Inlet Hydrostatic Burst Test Report	225 PSIG @ 225°F	Hydrostatic Test Report: 4GDR-1000B-V-B OUTLET CHAMBER
GDR-1000	B31.3	3/4", 1" NPT 3/4", 1" BSPT	Pilot Operated			580 PSIG	Hydrostatic Test Report: 4GDR-1000B-V-PO OUTLET CHAMBER		

** D Spring Outlet Chamber Burst Test Report is valid for the Pilot Operated version of the GDR-500 size regulator because main pressure bearing element and pressurized volume are identical, chamber attachment method is identical, and pressure ratings are identical.

GAS DELIVERY REGULATOR
1/4" - 1" NPT, BSPT, BSPP
Spring Reference or Pilot Operated

GDR SERIES

Description

The GDR Series Regulator provides reliable and precise pressure control in the most demanding applications. Optimized spring design with unique venturi design assures high flow with extremely low droop characteristics. Solid, non-tied diaphragm and all brass construction will provide leak-free and long-lasting performance. Regulator is fully balanced to virtually eliminate outlet pressure fluctuations due to inlet pressure variations. All GDR Series regulators are 100% factory tested.

Features

- **FULLY BALANCED DESIGN:** Maintains a constant delivery pressure regardless of inlet pressure fluctuations.
- **OPTIMIZED FOR HIGH FLOW:** Unique Venturi Tube and Optimized Spring Design allows for high flow rates.
- **WIDE PRESSURE RANGE:** Inlet Pressures up to 580 PSI, Outlet Pressures up to 450 PSI.
- **SOLID, NON-TIED, DIAPHRAGM:** Solid diaphragm eliminates potential leak path and increases sensitivity.
- **CONFIGURABLE:** Order Regulators with Various Porting Options, Panel-Mounted, with Chamber Pipe-A-Way, or Pilot Operated.
- **OXYGEN SERVICE COMPATIBLE:** Designed for use in Oxygen Service and Cleaned for use in O2 Service standard.
- **PED COMPLIANT:** SEP Declaration available (2014/68/EU Art. 4, ¶ 3)

Technical Data

GDR-500

Max Inlet Pressure: 580 PSIG (40 bar)

Outlet Pressure Ranges:

Spring	Outlet Pressure Range
A	0-55 PSIG (0-3.8 bar)
B	50-135 PSIG (3.5-9.3 bar)
C	125-225 PSIG (8.6-15.5 bar)
D	225-450* PSIG (15.5-31 bar)

*rated at 450 PSIG @ 100°F

A, B, and C Range Springs are interchangeable.
 D Range Spring requires dedicated Chamber.

Fail Open Flow Coefficients:

Port Configuration	Fail Open Cv
1/4" NPT and BSPT	1.6
3/8" NPT	2.4
1/2" NPT and BSPT	2.9

GDR-500 Pilot Operated

Max. Pilot: 450 PSIG (31.0 bar) @ 100°F

Max. Usable Cv: 1.5

Pilot Pressure to Outlet Pressure: 1/.95
 (100 PSI Pilot = 95 PSI Outlet)

GDR-1000

Max Inlet Pressure: 580 PSIG (40 bar)

Outlet Pressure Ranges:

Spring	Outlet Pressure Range
A	0-55 PSIG (0-3.8 bar)
B	50-135 PSIG (3.5-9.3 bar)
C	125-225 PSIG (8.6-15.5 bar)

A, B, and C Range Springs are interchangeable.

Fail Open Flow Coefficients:

Port Configuration	Fail Open Cv
3/4" and 1" NPT	5.8
3/4" and 1" BSPT	5.8

GDR-1000 Pilot Operated

Max. Pilot: 250 PSIG (17.2 bar) @ 140°F

Max. Usable Cv: 2.7

Pilot Pressure to Outlet Pressure: 1/.90
 (100 PSI Pilot = 90 PSI Outlet)

Effect of Inlet Pressure Variation on Set (Regulator Balance): < 0.25 PSI per 100 PSI

Materials of Construction

Component	Material
Body	CW617N Forged Brass, EN 12420
Adjustment Screw, Valve, Valve Stem, Spring Button, Spring Retainer, Venturi Tube	CDA 360 Brass, ASTM B16
Chamber Insert	303 SS, ASTM A276
Adjustment Springs	GDR-500: Music Wire, ASTM A228 GDR-1000: Chrome Silicon, ASTM A401
Valve Spring	302 SS, ASTM A313
Diaphragm	FKM or EPDM
Soft Seals (Valve and O'Rings)	FKM or EPDM
Trim (Flange Screws and Locknut)	18-8 Stainless Steel

NOTES: Regulators are assembled with Dupont Krytox® lubricant.



STANDARD



PILOT OPERATED



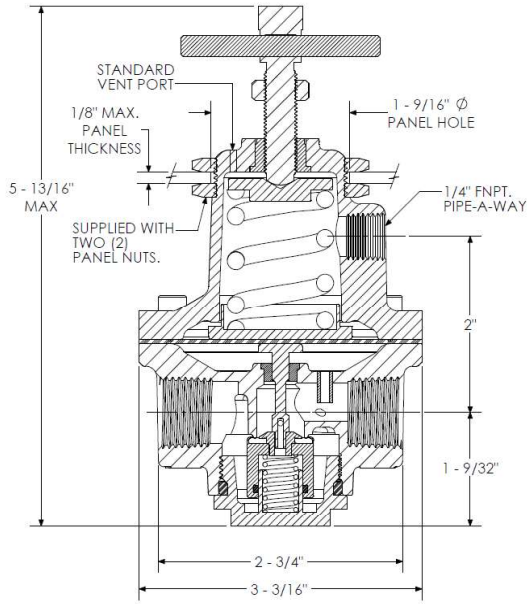
PANEL MOUNT



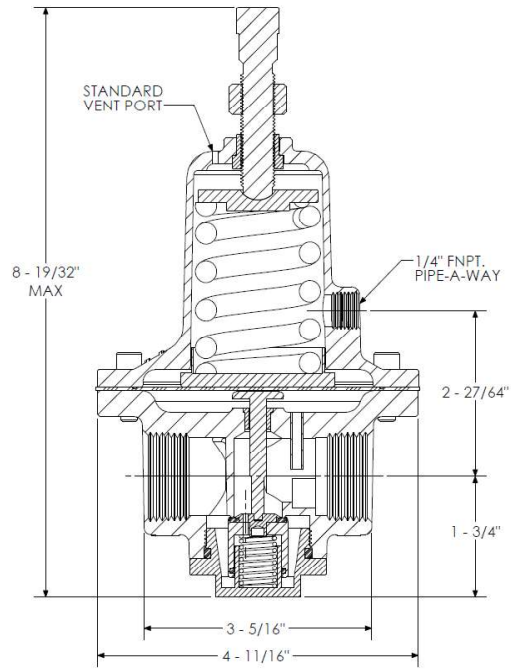
PIPE-A-WAY OPTION

GAS DELIVERY REGULATOR

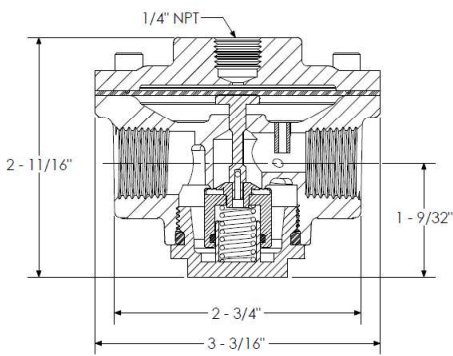
Dimensional Data



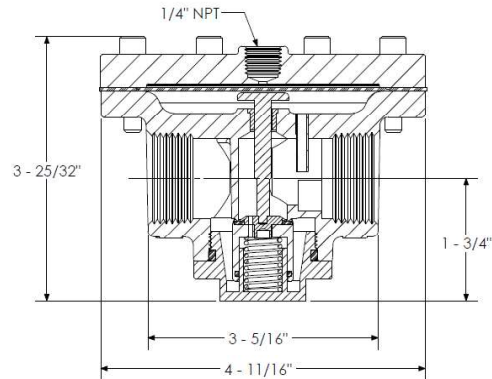
GDR-500
(shown with Panel Mount and Pipe-A-Way Options)



GDR-1000
(shown with Pipe-A-Way Option)



GDR-500 Pilot Operated

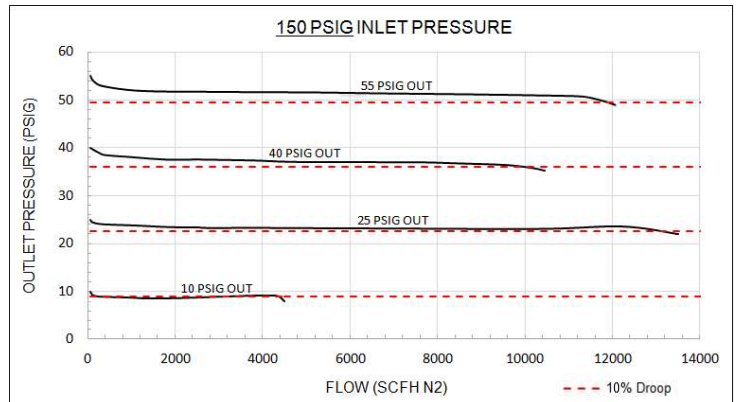
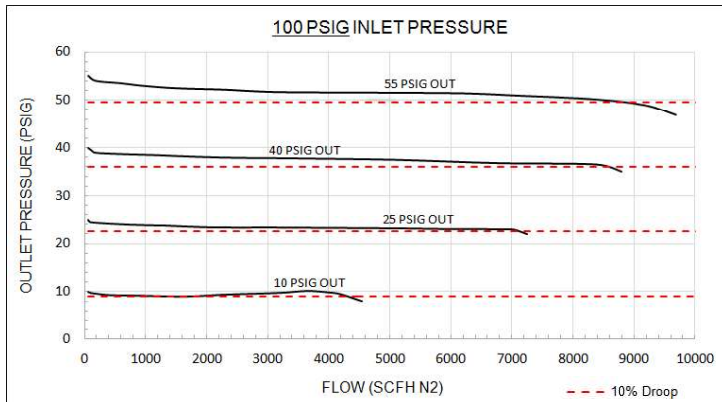


GDR-1000 Pilot Operated

Flow Performance

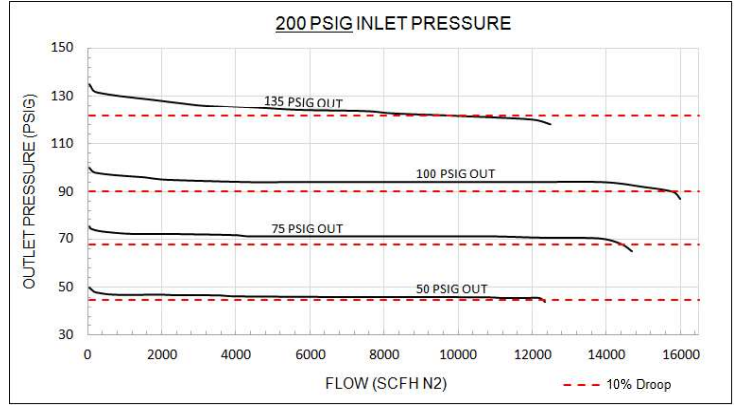
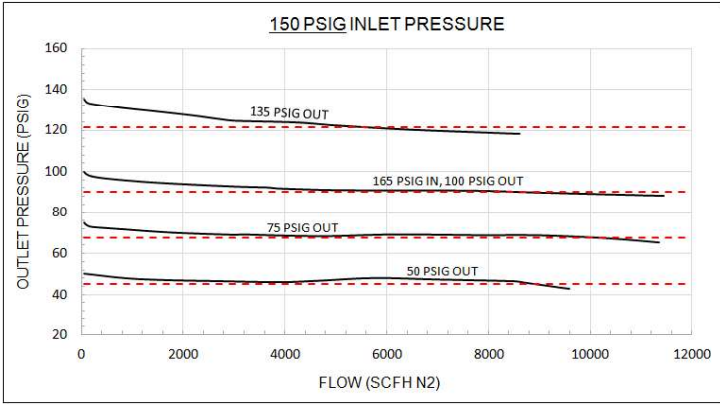
Each chart provides a variety of regulator setpoints and its respective flow performance with a constant inlet pressure condition. Flow Testing was performed using Nitrogen gas at ambient conditions. Use gas conversion factors listed on the next page to convert flow rates to a different gas service. Regulators were set in a dynamic condition at 60 SCFH N2 flow.

GDR-500: A Spring

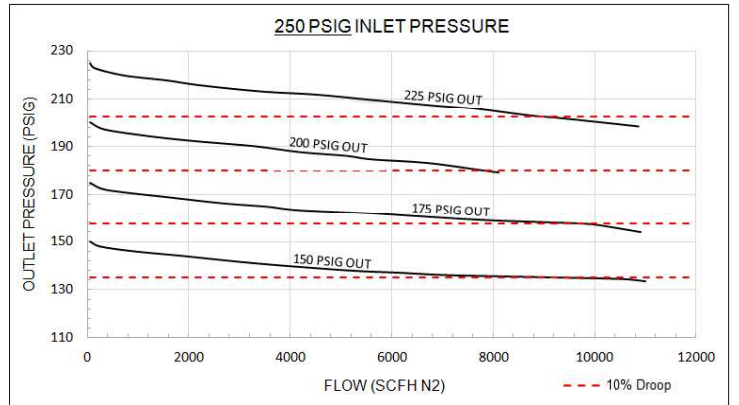
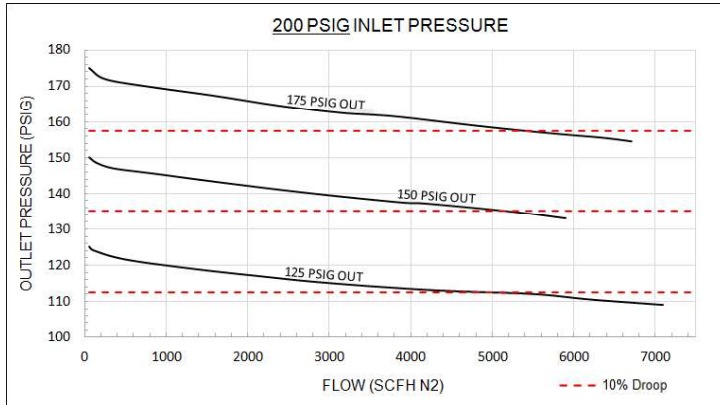


Flow Performance (continued)

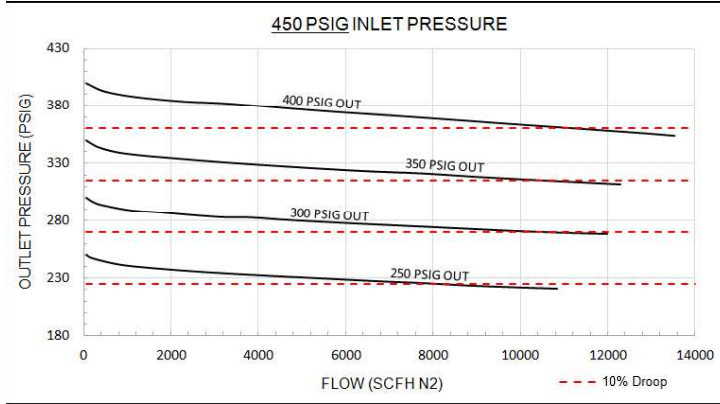
GDR-500: B Spring



GDR-500: C Spring



GDR-500: D Spring

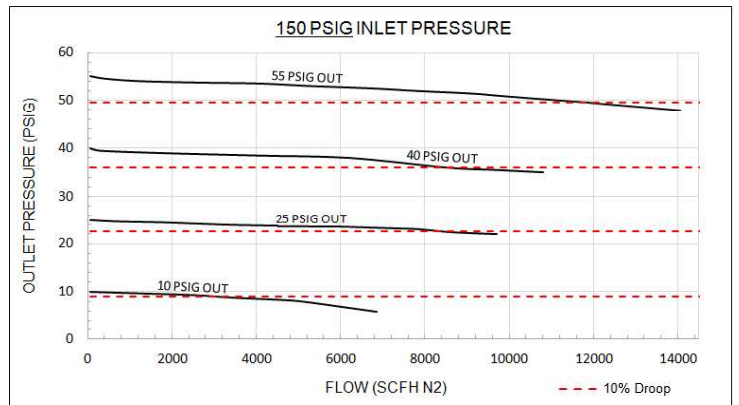
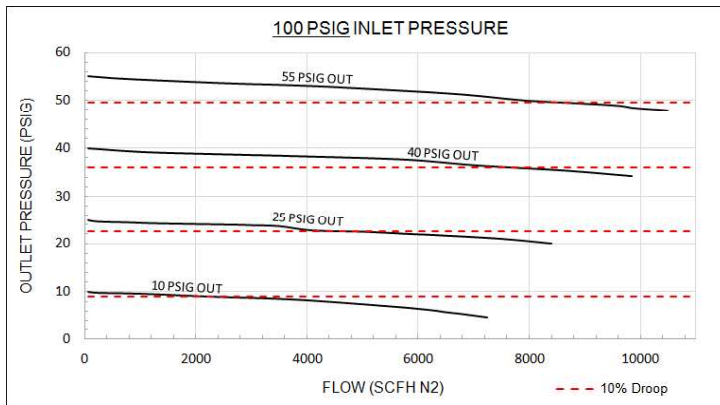


GAS CONVERSION FACTORS

Multiply Nitrogen Flow Rate by Conversion Factor to find equivalent gas flow rate.

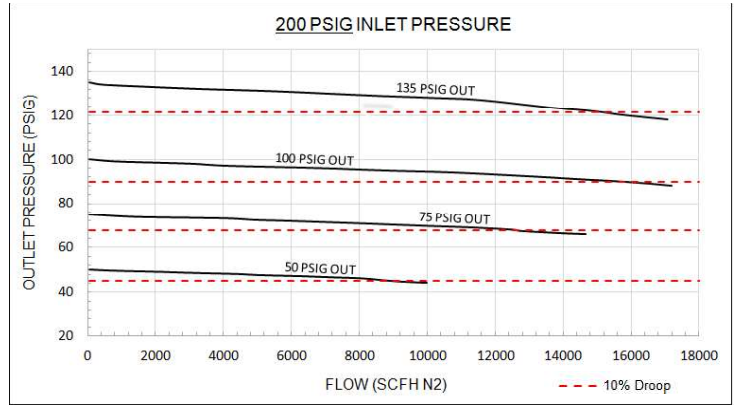
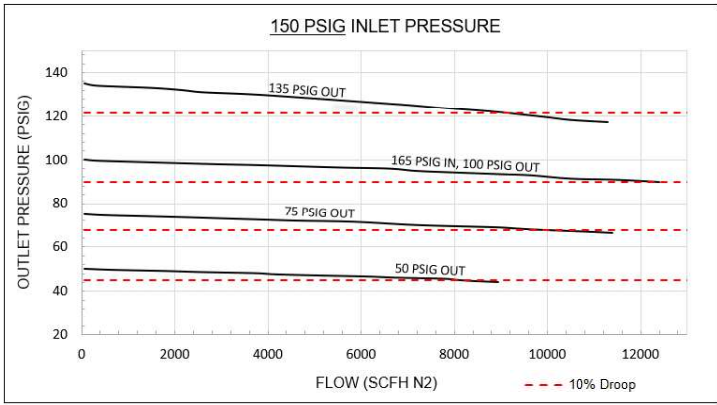
Gas	Conversion Factor
Air	0.985
Argon	0.837
Carbon Dioxide	0.795
Helium	2.645
Hydrogen	3.603
Nitrogen	1.0
Nitrous Oxide	0.799
Natural Gas	1.285
Oxygen	0.935
Methane	1.320

GDR-1000: A Spring

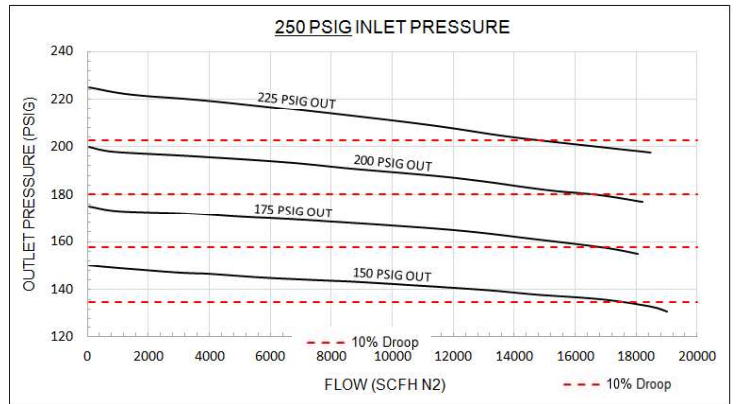
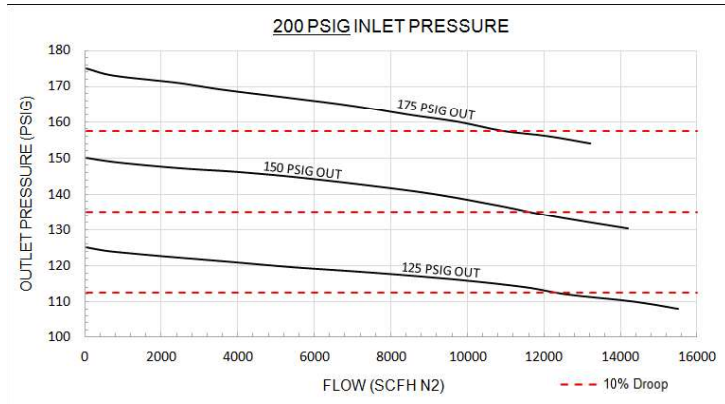


Flow Performance (continued)

GDR-1000: B Spring



GDR-1000: C Spring



How To Order

4GDR - 750B - V - A - P

SERIES
 4GDR - 4 Port Gas Delivery Regulator
 5GDR - 4 Port Gas Delivery Regulator with Pipe-A-Way Chamber (1/4" NPT)

PORT SIZE
 250B - 1/4" NPT
 375B - 3/8" NPT
 500B - 1/2" NPT
 2BSPT - 1/4" BSPT
 4BSPT - 1/2" BSPT
 750B - 3/4" NPT
 1000B - 1" NPT
 6BSPT - 3/4" BSPT
 8BSPT - 1" BSPT

GDR-500 ONLY

OPTION
 W - Hex Adjustment Screw
 P - Panel Mount

OUTLET PRESSURE RANGE
 A - 0 to 55 PSIG
 B - 50 to 135 PSIG
 C - 125-225 PSIG
 D - 225 to 450 PSIG
 PO - Pilot Operated

SEALS / DIAPHRAGM MATERIAL
 V - GLT Fluoroelastomer (-20°F to 225°F)
 EP - EPDM (-60°F to 225°F)

Note: All Regulators are supplied with 2 (two) 1/4" NPT Pipe Plugs. Pipe plugs are supplied finger tight. Final installation is the responsibility of the end user.

Compatibility Note: EP Seals are Recommended for CO2 Service.

Repair Kits

Includes: Valve Stem, Diaphragm, Valve Assembly, Valve Spring and Bottom Plug O-Ring

Model Size	Seal Material	Specify
1/4", 3/8" & 1/2"	FKM	GDR-RK-1V
	EPDM	GDR-RK-1EP
3/4" & 1"	FKM	GDR-RK-2V
	EPDM	GDR-RK-2EP

NOTE: All Repair Kits are cleaned for Oxygen Service.

Replacement Spring Kits

Includes: Spring (3/4" & 1" kit includes corresponding spring retainer)

Model Size	Specify
1/4", 3/8" & 1/2"	GDR-SK-1-*
3/4" & 1"	GDR-SK-2-*

*Specify Spring Model Code: A, B, C, or D

PROPER COMPONENT SELECTION – When specifying a component, the total system design must be considered to ensure safe and trouble-free performance. Intended component function, materials compatibility, pressure ratings, installation, environment and maintenance are the responsibility of the system designer.



www.generant.com

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