



NGR04 Series

PRESSURE REDUCING REGULATORS
for Residential, Commercial or Industrial Applications

The NGR04 series spring loaded gas regulators with internal relief provide consistent and controlled pressure in a variety of residential, industrial and commercial applications. The internal relief feature is engineered to help minimize over pressurization downstream due to possible dirt/debris that may enter the regulator inhibiting proper lockup. The NGR04 regulators are designed to be used in many applications where non-corrosive dry gases are used such as Natural gas, LP or manufactured type gases.



FEATURES

- Internal Relief
- Outlet pressures up to 3 psig
- 500+ : 1 turndown
- Conforms to ANSI B109.4
- Field Interchangeable Orifice
- Field Interchangeable Springs
- Corrosion resistant exterior
- Compact Size

SPECIFICATIONS

Pipe Sizes:	1-1/4" NPT to 3" FL
Gas Types:	Natural Gas, LPG, other non-corrosive dry gases
Maximum Inlet Pressure:	10 to 125 psig per Orifice
Outlet Pressure Range:	3"w.c. to 3 psig
Maximum Emergency Inlet Pressure:	175 psig
Operating Temp:	-20F - +150F
Materials:	Housing: Epoxy Coated Aluminum Valve Body: Cast Iron Diaphragm/Valve Seat: Buna N Orifice: High Strength Brass

NGR04 Series PRESSURE REDUCING REGULATORS

7" w.c. Set Point - 1" Pressure Drop

Inlet Pressure	ORIFICE					
	1/4"	3/8"	1/2"	5/8"	3/4"	7/8"
1	377	740	1013	1039	2065	2078
2	623	1140	1636	1818	3740	3896
3	805	1299	2143	2961	4948	5610
5	935	2104	4403	5000	6935	8571
8	1325	3000	5844	6429	9195	10987
10	1558	3299	6390	7052	10286	11065
15	2026	3896	8104	8571		
25	2610	4156	11610			
35	3195	4909				
50	4286	5961				
75	6234					
100	7247					
125	9399					

Gray S04B used to develop table

14" w.c. Set Point - 1" Pressure Drop

Inlet Pressure	ORIFICE					
	1/4"	3/8"	1/2"	5/8"	3/4"	7/8"
1	468	935	1792	1352	1403	1870
2	623	1403	2338	2350	2416	3740
3	779	2104	2961	3462	3506	5143
5	1091	3039	3740	4481	4519	7403
8	1169	3818	5622	6441	6545	10299
10	1558	4208	6623	8284	8338	12935
15	1870	5100	8727	12935		
25	2727	6935	11377			
35	3584	8338				
50	4597	10597				
75	6312					
100	7247					
125	9579					

Silver S04E used to develop table

1 psig Set Point (HP) - 20% Pressure Drop

Inlet Pressure	ORIFICE					
	1/4"	3/8"	1/2"	5/8"	3/4"	7/8"
1						
2	468	545	623	701	1247	1870
3	623	779	1091	1169	2182	2727
5	935	1091	1948	1955	3506	4052
8	1247	1558	2883	3117	5143	6857
10	1403	2026	3896	3974	6701	8727
15	1870	2416	6390	7169		
25	2649	6234	9896			
35	3117	7870				
50	4442	9800				
75	6449					
100	8374					
125	10367					

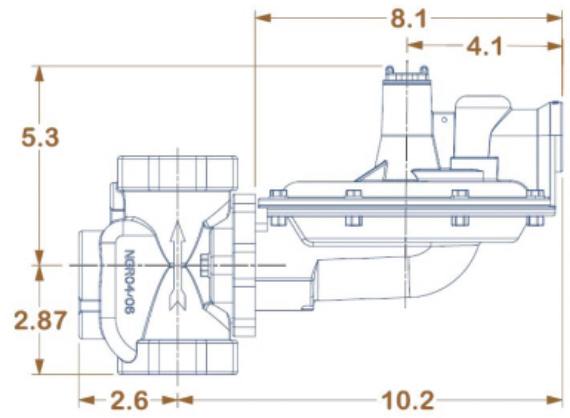
Red/Gray (HP) S04F used to develop table

2 psig Set Point (HP) - 20% Pressure Drop

Inlet Pressure	ORIFICE					
	1/4"	3/8"	1/2"	5/8"	3/4"	7/8"
1						
2						
3	623	1013	1403	1714	2104	2260
5	857	1870	2104	2805	3429	3974
8	1169	2494	3584	4753	5900	5922
10	1403	3506	4519	5688	6234	7325
15	1792	4442	6545	8104		
25	2649	6312	9351			
35	3351	7792				
50	4442	9740				
75	6548					
100	8517					
125	10538					

White (HP) S0204E used to develop table

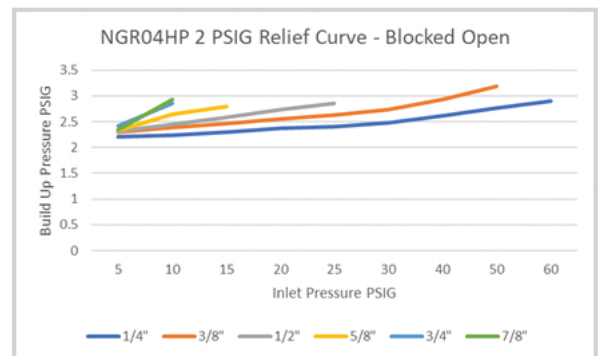
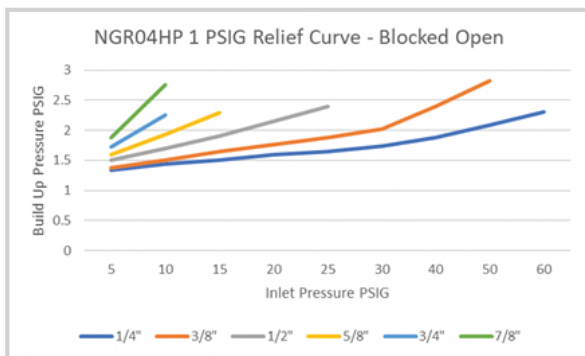
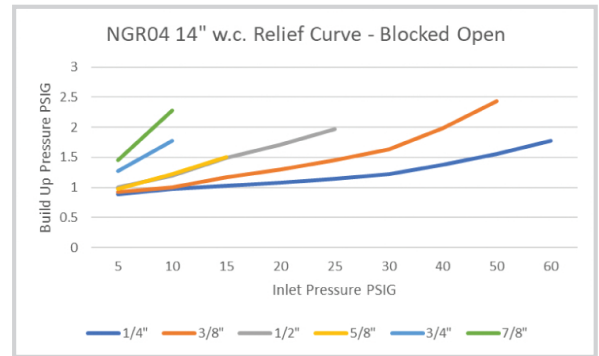
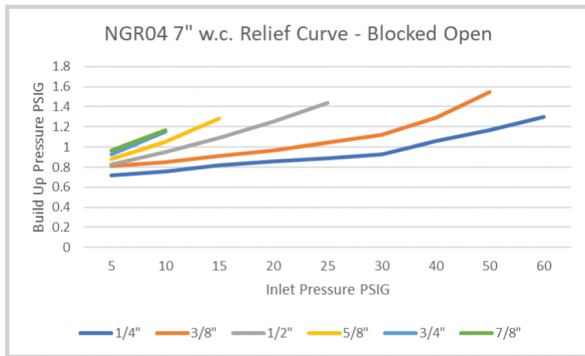
Model	Pipe Size	Vent (NPT)	Wt. (lb)
NGR04	1-1/4", 1-1/2", 2"	1"	10.75
	2" FL		21.55
	3" FL		28.80



Orifice Max Pressure		
Size	Max Inlet Pressure	P/N
1/4"	125 psig	F0406A
3/8"	50 psig	F0406B
1/2"	25 psig	F0406C
5/8"	15 psig	F0406D
3/4"	10 psig	F0406E
7/8"	10 psig	F0406F

Spring Chart		
Color	Outlet Range	P/N
Brown	3"wc - 7"wc	S04A
Gray	4"wc - 13"wc	S04B
Black	9"wc - 14"wc	S04C
Blue	9"wc - 15"wc	S04D
Silver	12"wc - 20"wc	S04E
Red/Gray (HP)	13"wc - 28"wc	S04F
Yellow (HP)	1psig - 2psig	S04G
Red (HP)	1psig - 2.5psig	S04H
White (HP)	1psig - 3psig	S0204E

Gas Type	Specific Gravity	Correction Factor (CF)
Natural Gas	0.60	1.00
Propane	1.53	0.63
Air	1.00	0.77
Propane-Air-Mix	1.20	0.71
Nitrogen	0.97	0.79
Butane	2.01	0.55
Carbon Dioxide (Dry)	1.52	0.63
Carbon Monoxide (Dry)	0.97	0.79



Blocked open relief curves developed using a 3/32" blockage across valve seat. Lever disconnect curves available upon request. Individual results may vary.

INSTALLATION INSTRUCTIONS

WARNING: A regulator may vent some gas to the atmosphere. Where ignition sources may be present, vented gas may accumulate and cause fire or explosion resulting in personal injury, death and/or property damage.

WARNING: Failure to follow these Instructions, National Fuel Gas Code(NFPA 54) guidelines, local/state codes when installing/maintaining gas regulators can result in an explosion and/or fire causing property damage and personal injury or death. ONLY A QUALIFIED PERSON MUST INSTALL OR SERVICE THE REGULATOR.

Installation

Installation shall be performed in accordance with local codes, or in the absence of local codes, in accordance with the National Fuel Gas Code, ANSI Z223.1/NFPA 54.

1. Confirm proper regulator has been chosen for the defined application.
2. Remove inlet and outlet protection plugs from the regulator. Verify no debris is within the inlet or outlet of the regulator. TURN OFF GAS SUPPLY TO MOUNTING LOCATION.
3. Apply proper pipe joint sealant to the male pipe threads only. If flange connections are used, ensure appropriate gasket is installed between mating flanges.
4. Gas MUST flow in direction of the 'arrow' on the underside of the regulator. 'IN' is indicated on the inlet side of the regulator.
5. Regulator may be installed in any position with concern of 'VENT' location as per 6 & 7 below.

CAUTION: USE PRECAUTION WHEN RUNNING VENT PIPING. ENSURE END OF VENT PIPING IS ADEQUATELY AWAY FROM ANY IGNITION SOURCES.

6. OUTDOOR INSTALL – When installing in an outdoor environment or where debris or excessive moisture may be in the air the 'VENT' should never face upward allowing debris or liquid to enter. The 'VENT' screen should never be removed unless a 'VENT' piping is needed to route the venting to another location.
7. INDOOR INSTALL – As per applicable local and state codes may dictate, a separate 'VENT' piping is required for each regulator to allow the regulator to function properly and relief gas in the case of internal relief. Do not combine vent lines. Vent pipe inner diameter should increase one nominal pipe size approximately every 15 feet of length. This is important for proper performance. Example: 3/8" to 1/2" to 3/4", etc.
8. Tighten inlet/outlet piping to proper torque. If flange connections are used ensure bolts are tightened evenly and do not stress the flange by uneven piping or improper flange-to-flange spacing as this may result in broken flanges or leakage and is not covered under manufacturer warranty.

Start-up Procedure

1. Verify Inlet pressure does not exceed regulator and/or orifice MAOP as shown in the specification tables. Mount pressure gauge downstream of the regulator to monitor regulator outlet pressure.
2. With the downstream pressure valve closed, slowly open the inlet valve. Allow the pressure to build slowly until proper downstream pressure is shown on the gauge.

Outlet Pressure Adjustment

1. Remove spring cap from regulator.
2. With proper tool rotate adjustment ferrule CLOCKWISE to INCREASE pressure and COUNTERCLOCKWISE to DECREASE pressure.
3. Replace spring cap.

COMMON SPARE PARTS	
PART	P/N
Orifice O-Ring	NGR0406-ORFR
Valve Body Gasket	NGR0406-VBG
Spring Cap	NGR04-SC
Spring Cap Gasket	NGR04-SCG
Spring Ferrule	NGR04-SF
Valve Body Bolts	NGR0406-VBB
Valve Seat	NGR0406-VS