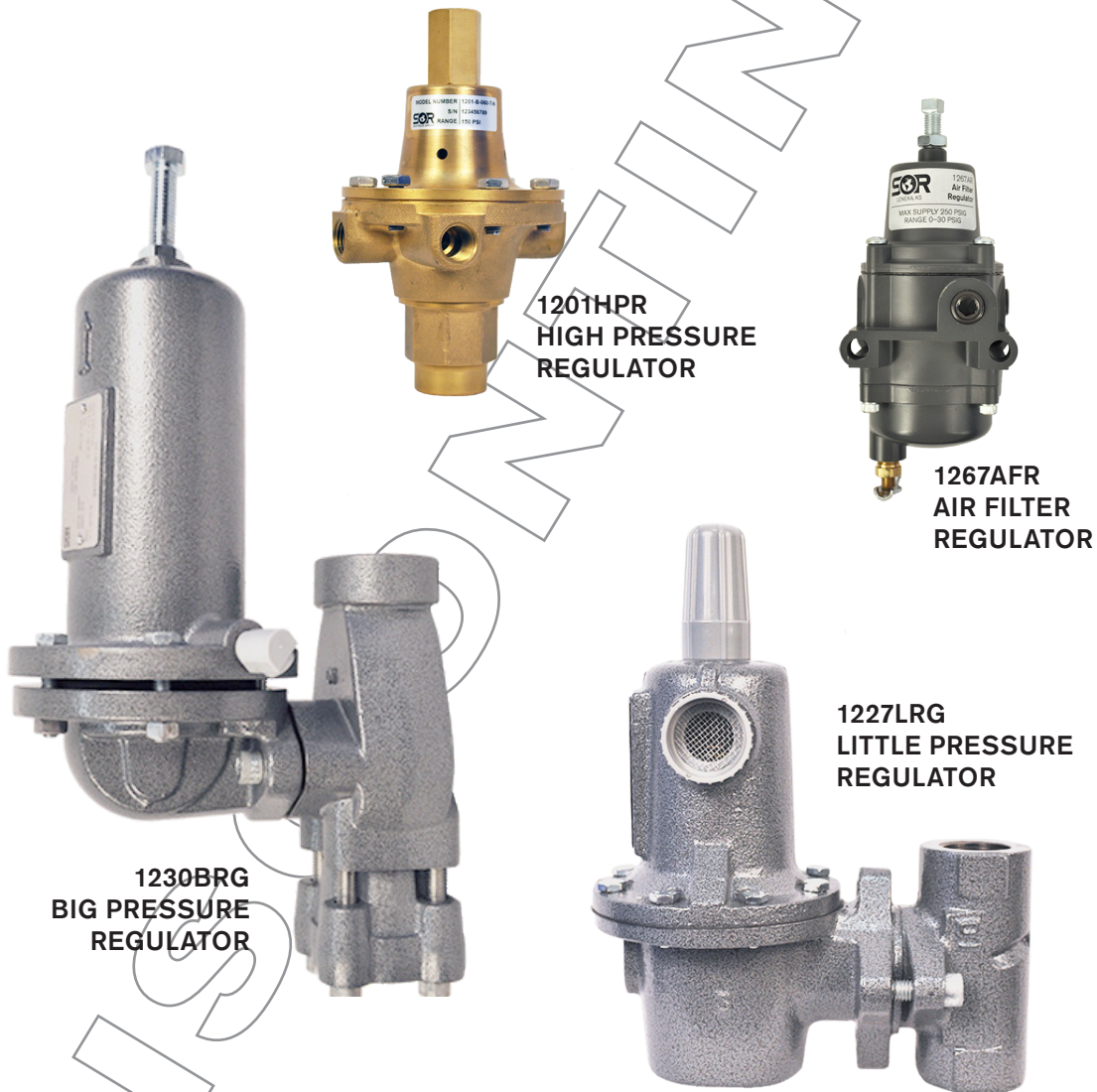


1200 Series Pressure Regulators

SOR® pressure regulators are durable, high performing instruments that are designed to provide reliable control of pressure in various stages of a flow system. From first cut, high pressure regulation applications, to low pressure regulation and air filtration applications, SOR provides high quality instruments to control the process. All of the regulators in this catalog offer customizable spring ranges to enhance the control of their output pressure. NACE compliant options are also available for SOR pressure regulators.



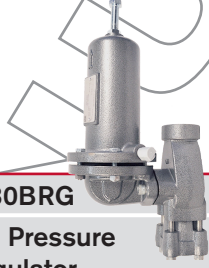



1200 Series Pressure Regulators

Model Selection

Section

1201HPR High Pressure Regulator	4
1227LRG Little Pressure Regulator	7
1230BRG Big Pressure Regulator	19
1267AFR Air Filter Regulator	30

Model	 1201HPR High Pressure Regulator	 1227LRG Little Pressure Regulator	 1230BRG Big Pressure Regulator	 1267AFR Air Filter Regulator
Operating Media	Air Inert Gas Natural Gas			
Body Sizes	1/4" NPT	1" and 2" NPT	1" and 2" NPT	1/4" and 1/2" NPT
Max Supply Pressure*	5000 psi	2000 psi*	1500 psi*	250 psi
	345 bar	138 bar*	103 bar*	17 bar
Output Ranges	0-30 psi 0-60 psi 0-120 psi 0-150 psi 0-225 psi	5-20 psi 15-40 psi 35-80 psi 70-150 psi	27-50 psi 46-95 psi 90-150 psi 150-200 psi 200-275 psi 275-500 psi	0-30 psi 0-60 psi 0-120 psi
	0-2 bar 0-4 bar 0-8 bar 0-10 bar 0-15 bar	0.4-1.4 bar 1.0-2.8 bar 2.4-5.5 bar 4.8-10.3 bar	1.9-3.5 bar 3.2-6.6 bar 6.2-10.3 bar 10.3-13.8 bar 13.8-19 bar 19-34.5 bar	0-2 bar 0-4 bar 0-8 bar
Description	Designed to provide pressure control in processes involving high-pressure drops. Three outlet ports allows the reduced pressure to be sent to three separate pneumatically controlled devices.	Designed to provide pressure control for a wide range of processes - Includes additional options not available for customer-specification on 1201HPR or 1267AFR, such as selecting elastomer materials and orifice size.	Designed to provide pressure control across a vast array of industries and applications - Similar to the 1227LRG, includes additional product options not available for customer-specification on other 1200 Series Pressure Regulators.	Designed to provide clean, accurate air pressure to instruments, valves, and other automatic control equipment. Combines pressure regulation with filtration in an integral compact package.
Catalog Pages	4-6	7-18	19-29	30-34

* Max Supply Pressure will vary depending on selected options. The ratings listed in the table are the highest possible; consult the factory for details.

1200 Series Pressure Regulators

Applications

Applications

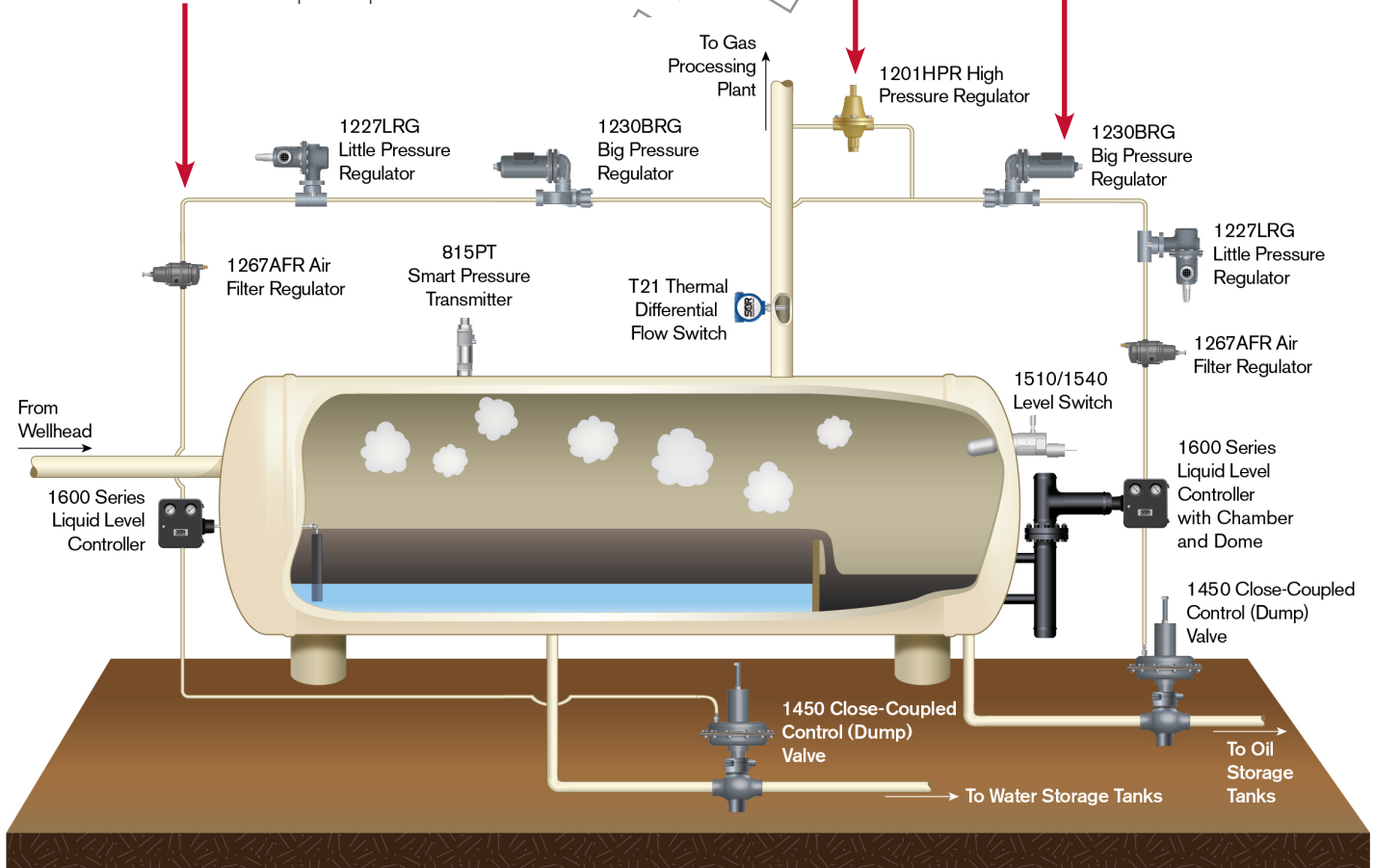
- Natural Gas Instrumentation Columns
- Control Valve Automation
- Pneumatic Controllers
- Pneumatic Tooling
- Catalytic Heaters
- Chemical Injection Pumps

3 Phase Separator

In this case the 1201HPR High Pressure Regulator is taking the high pressure natural gas coming off of the well by tapping into the main line going to the gas processing plant. This reduced pressure is then sent to the pneumatic equipment on the separator. Compressed air can also be used.

A 1230BRG Big Pressure Regulator takes the still relatively high pressure gas from the 1201HPR High Pressure Regulator and reduces it once again to an even lower pressure (<250 psi) that the 1267AFR Air Filter Regulator can handle.

The 1267AFR Air Filter Regulator is used to supply accurate, filtered, pneumatic pressure to a Liquid Level Controller. When the level set point is met, the level controller then sends the pneumatic air to a control valve to dump the liquid.



1200 Series Pressure Regulators

1201HPR High Pressure Regulator

The 1201HPR High Pressure Regulator is designed to provide pressure control in numerous processes that involve a high-pressure drop. It is an extremely durable regulator capable of handling a max inlet pressure of 5000 psi (345 bar). The spring configuration of the 1201HPR can be configured to provide five different outlet pressures ranging from 0-30 psi (0-2.1 bar) to 0-255 psi (0-15.5 bar).

Features

- 3 outlet ports allow for regulated pressure to go to 3 separate pneumatic devices
- Adjustment screw with tamper resistant cap standard, or optional T-handle adjustment
- Seat block contains four seats - if sealing poorly, simply rotate the block for a new elastomer seat
- Warranty - 1 year



Product Specifications

Inlet Size	1/4" NPT	Temperature Limits	-40°F to 225°F (-40°C to 107°C)	
Outlet Number and Size	3 outlets, 1/4" NPT	Weight	3.25 lbs. (1.47 kg)	
Spring Case Vent	Brass 4 holes, (5/32" each) SS 1/4" NPTF	Operating Media	Air, Inert Gas and Natural Gas	
Output Ranges	0 to 30 psi (0 to 2 bar) 0 to 60 psi (0 to 4 bar) 0 to 120 psi (0 to 8 bar) 0 to 150 psi (0 to 10 bar) 0 to 225 psi (0 to 15 bar)	Materials of Construction	<u>1201HPR-B</u>	<u>1201HPR-S</u>
Max Supply Pressure	5000 psi (345 bar)	Body, Bonnet, Bottom Plug	Brass	316SS
Orifice and Flow Coefficient Value	5/64", Cv = 0.18*	Tamper Resistant Cover	Brass	316SS
		Diaphragm	302SS	Monel 400
		Seals	Nitrile	PTFE
		Valve Spring	17-7PH SS	MP35N
		Range Spring	Stainless Steel	
		Seats	Nylon	PTFE

Design and specifications are subject to change without notice. For latest revision, see SORInc.com.

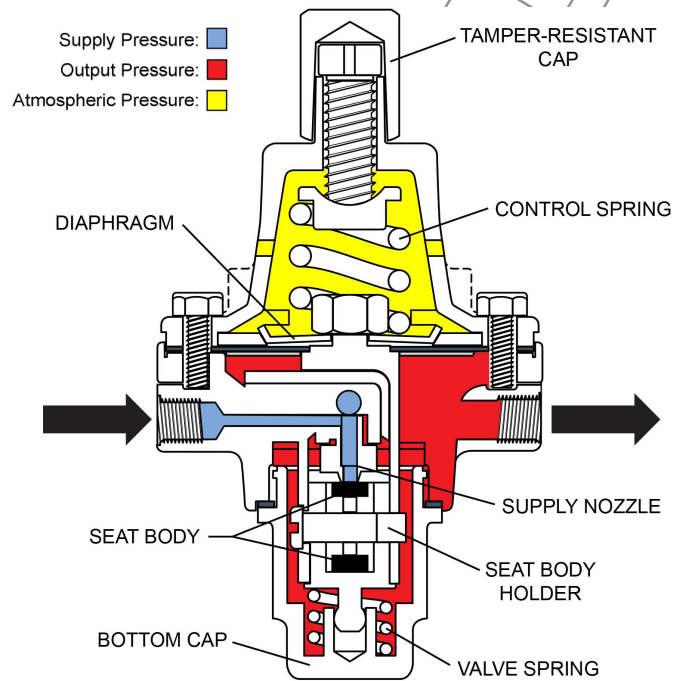
* Cv value is a theoretical value obtained from calculations using ISA-75 01.01-2007 standard. Please contact the factory for more information.

1200 Series Pressure Regulators

1201HPR High Pressure Regulator

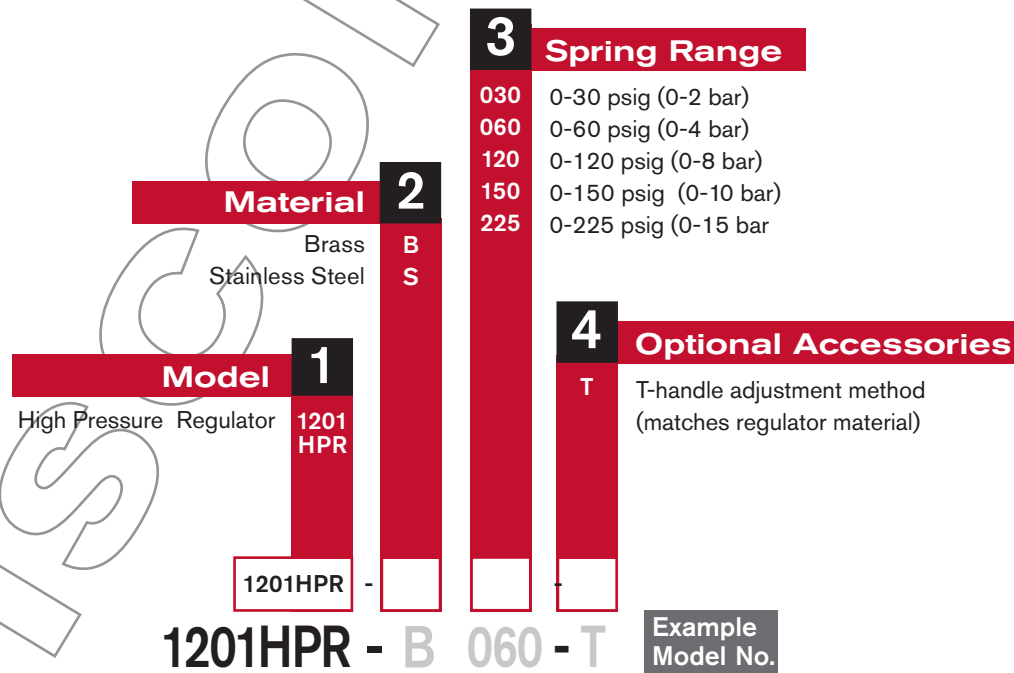
Principles of Operation

Directly operated, the 1201HPR registers downstream pressure through the body to the underside of the diaphragm. The disk is forced towards the orifice when downstream pressure is at or above the set pressure of the regulator, and less media flows through the regulator. When the downstream pressure decreases (as demand for the media increases), the regulator spring is able to extend, moving the disk assembly away from the orifice. Media is then allowed to flow through the regulator at a higher rate, until the downstream pressure once again reaches the set point. After the set point is reached, the downstream pressure pushes the disk assembly back towards the orifice, thus reducing flow through the regulator once more.



How to Order

Below is the SOR quick select model number tree that provides you with all the options to configure and order a product for your application. You must select a designator for each component.

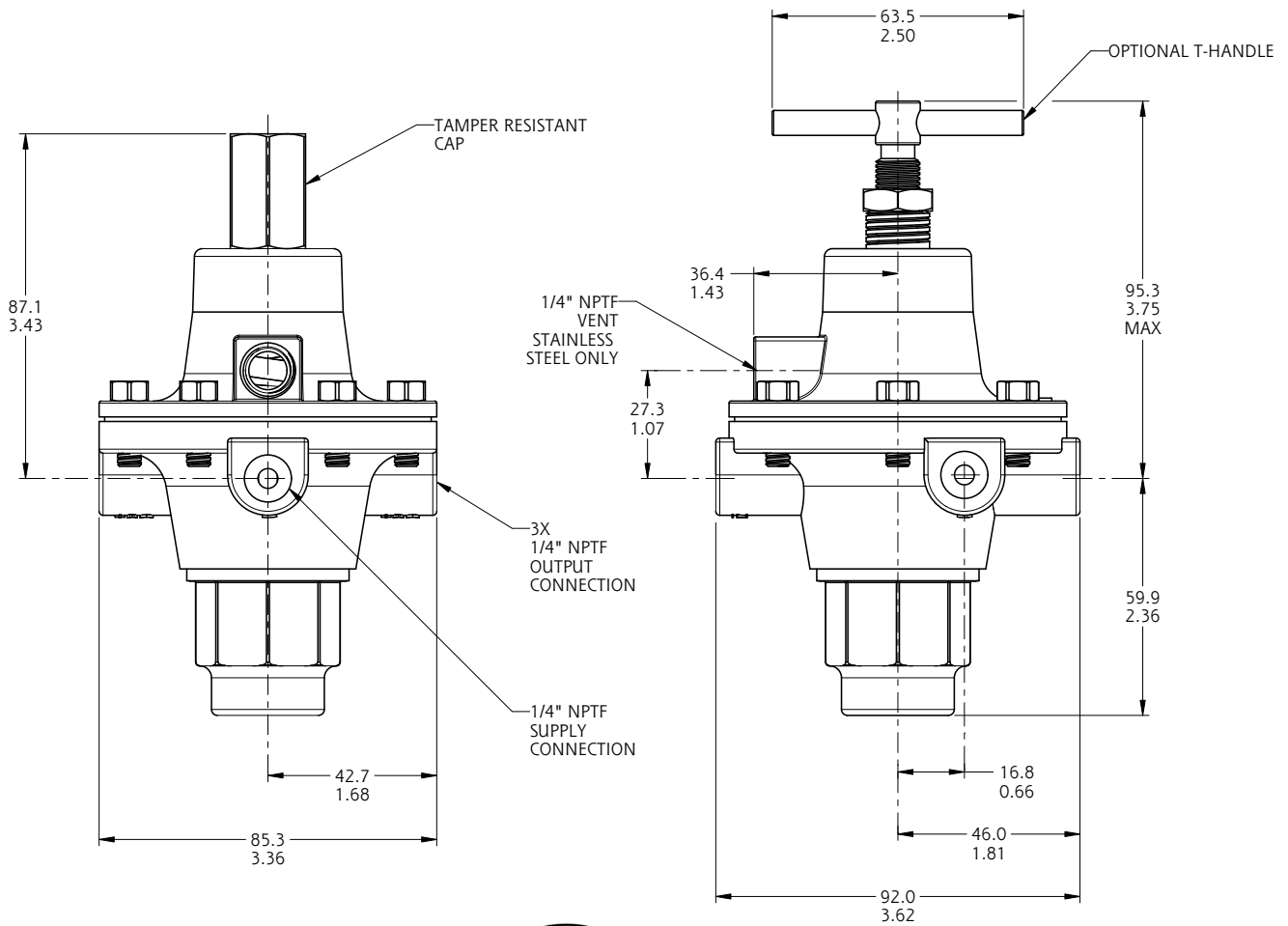


* For a T-handle bar adjustment method to replace the Allen Head, please include "T" accessory in model number or order part number 1201-BHND for Brass or 1201-SHND for Stainless Steel.

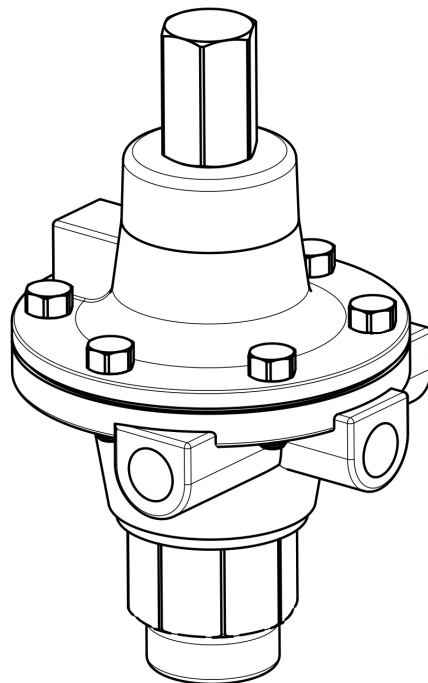
1200 Series Pressure Regulators

1201HPR High Pressure Regulator

Dimensions shown are for reference only. They may be changed without notice. Contact the factory for certified dimension drawings. Linear = mm/in.



Drawing 0091770



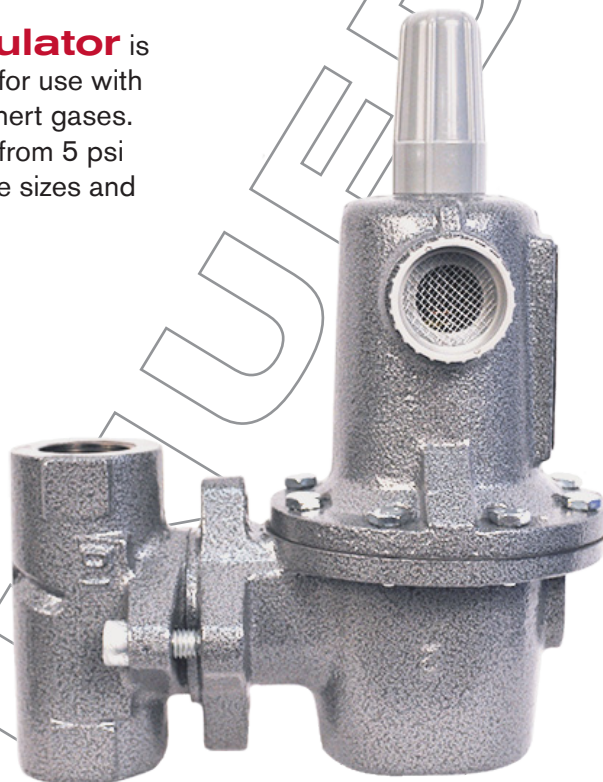
1200 Series Pressure Regulators

1227LRG Little Pressure Regulator

The **1227LRG Little Pressure Regulator** is a pressure-reducing, direct-operated regulator suitable for use with compressed air, natural gas, or an assortment of other inert gases. The 1227LRG is available with output ranges that span from 5 psi up to 150 psi and can be ordered with a variety of orifice sizes and materials providing application flexibility.

Features

- Guarded against unwanted set point adjustment with tamper-proof cap
- Trim can be replaced without disconnecting regulator from the system
- Can be re-arranged into multiple orientations for difficult installations with limited maneuverability
- CRN and NACE MR0175 configurations available
- Warranty – 1 year



Product Specifications

Body Sizes	1" or 2" NPT (DN 25 or 50)	Temperature Limits:	
Output Ranges	5 to 20 psi (0.4 to 1.4 bar) 15 to 40 psi (1.0 to 2.8 bar) 35 to 80 psi (2.4 to 5.5 bar) 70 to 150 psi (4.8 to 10.3 bar)	Elastomer Material	
Orifice Sizes	3/32", 1/8", 3/16", 1/4", 3/8", 1/2"	Fluorocarbon (FKM)	0°F to 180°F (-18°C to 82°C)
Maximum Inlet Pressure	See Table 1	Nitrile (NBR) & Nylon (PA)	-40°F to 180°F (-40°C to 82°C)
Body Inlet Pressure Rating	Ductile Iron: 1000 psi (69 bar) LCC Steel: 2000 psi (138 bar)	Body Material	
Valve Disk Inlet Pressure Rating	Fluorocarbon (FKM): 300 psi (21 bar) Nitrile (NBR): 1000 psi (69 bar) Nylon (PA): 2000 psi (138 bar)	Ductile Iron	-20°F to 180°F (-29°C to 82°C)
Diaphragm Casing Pressure Ratings	See Table 2	LCC Steel	-40°F to 180°F (-40°C to 82°C)
Cv Values	See Table 3	Weights	1" NPT / DN 25 Body: 6.5 lbs. (3 kg) 2" NPT / DN 50 Body: 10 lbs. (4.5 kg)
Flow Capacities	See Tables 4 & 5	Operating Media	Compressed Air, Natural Gas, Other Inert Gases
		Materials of Construction:	
		Body, Spring Case, and Diaphragm Casing	Ductile Iron (Standard) or LCC Steel (NACE)
		Trim (Orifice, Disk Holder, Pusher Post)	Aluminum (Standard) or Stainless Steel (NACE)
		Valve Disk	Nitrile (NBR, Standard), Fluorocarbon (FKM), or Nylon (PA)
		Elastomers (Diaphragm, O-Rings, and Stabilizer)	Nitrile (NBR, Standard) or Fluorocarbon (FKM)

Design and specifications are subject to change without notice. For latest revision, see SORInc.com.

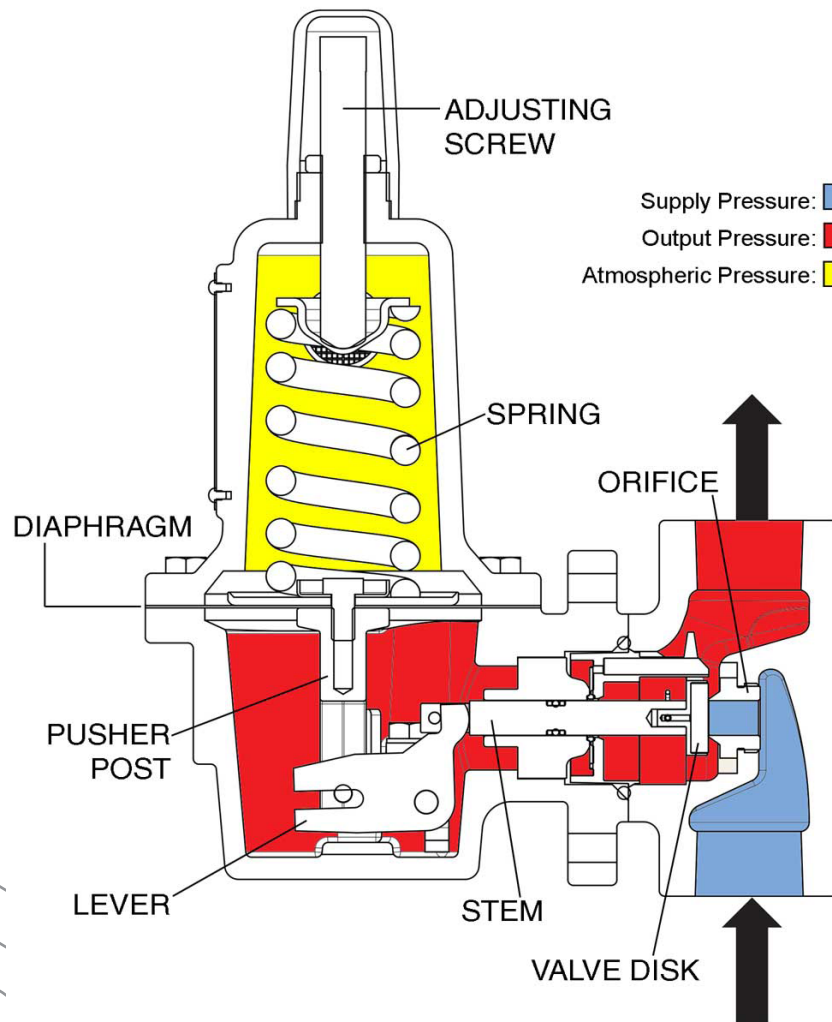
1200 Series Pressure Regulators

1227LRG Little Pressure Regulator

Principles of Operation

The 1227LRG utilizes a force counter-balance design consisting of a spring, diaphragm, and lever mechanism. The spring compression dictates the set point of the regulator while the diaphragm senses the downstream pressure. As downstream demand decreases, the downstream pressure increases until it reaches or exceeds the set point of the compressed spring; this causes the valve stem, lever, and pusher post assembly to move together, positioning the valve disk closer to the orifice and thereby reducing the flow of gas. On the other hand, when the downstream demand increases, the downstream pressure will decrease. The reduced downstream pressure allows the spring to push down against the pusher post and lever assembly, pulling the valve disk farther away from the orifice and increasing the flow of gas through the regulator.

Note: The SOR 1227LRG Little Pressure Regulator does not include internal relief. Therefore, if the inlet pressure is able to exceed the diaphragm casing pressure rating, the user must provide a pressure-relieving device.

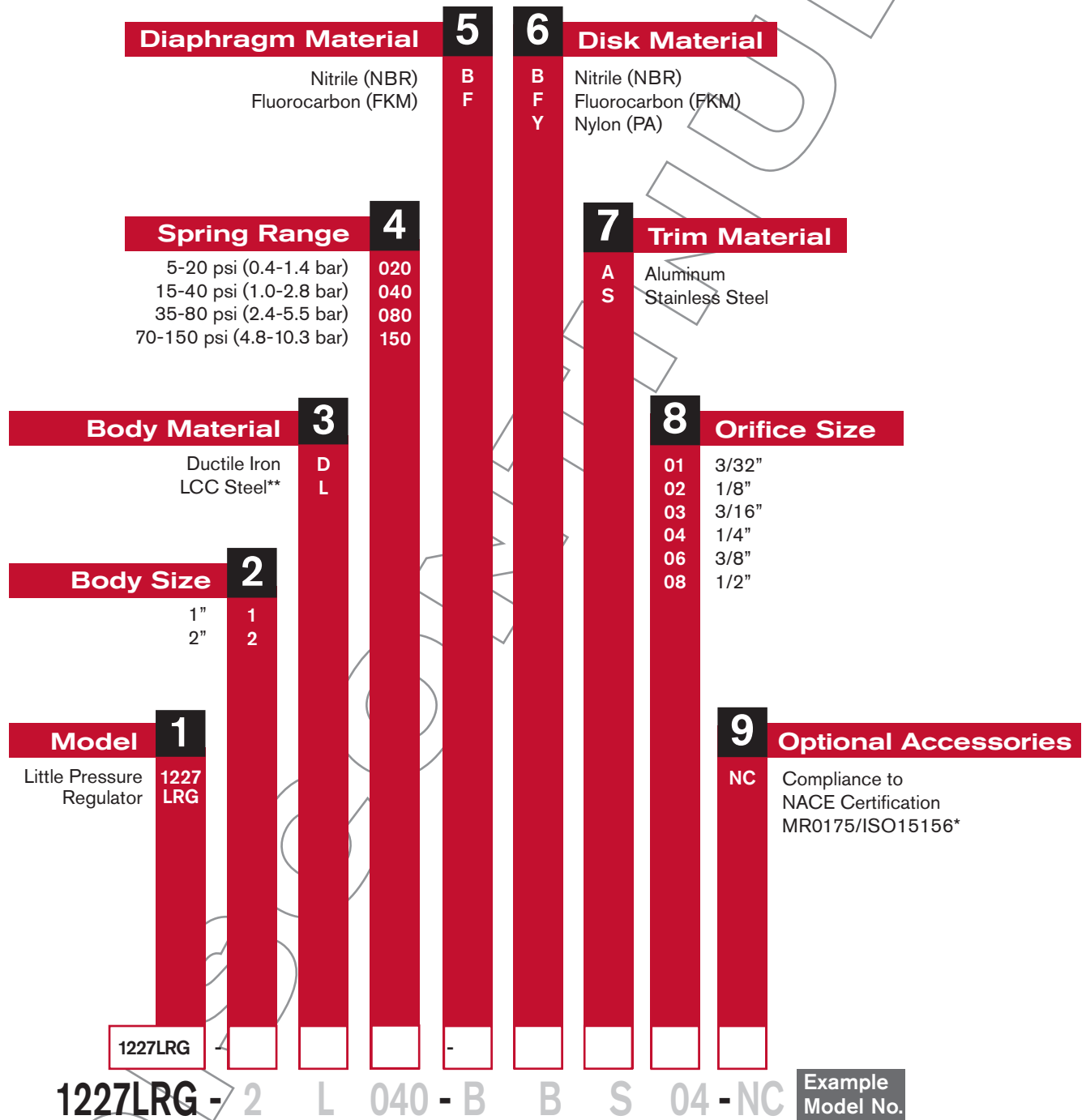


1200 Series Pressure Regulators

1227LRG Little Pressure Regulator

How to Order

Below is the SOR quick select model number tree that provides you with all the options to configure and order a product for your application. You must select a designator for each component.



* "L" Body Material and "S" Trim Material required for NACE

** Product holds a Canadian Registration Number (CRN) only available for LCC steel body material.

1200 Series Pressure Regulators

1227LRG
Little Pressure Regulator

Table 1: Maximum Inlet Pressure by Output Range, Orifice Size, and Disk Material

Output Range**	Orifice Size		Maximum Inlet Pressure*					
			Fluorocarbon (FKM) Disk		Nitrile (NBR) Disk		Nylon (PA) Disk	
	in.	mm	psi	bar	psi	bar	psi	bar
5-20 psi (0.4-1.4 bar)	3/32	2.4	300	20.7	1000	69	2000	138
	1/8	3.2	300	20.7	1000	69	1000	69
	3/16	4.8	300	20.7	750	51.7	750	15.7
	1/4	6.4	300	20.7	500	34.5	500	34.5
	3/8	9.5	300	20.7	300	20.7	300	20.7
	1/2	13	300	20.7	250	17.2	250	17.2
15-40 psi (1.0-2.8 bar)	3/32	2.4	300	20.7	1000	69	2000	138
	1/8	3.2	300	20.7	1000	69	1500	103
	3/16	4.8	300	20.7	1000	69	1000	69
	1/4	6.4	300	20.7	750	51.7	750	51.7
	3/8	9.5	300	20.7	500	34.5	500	34.5
	1/2	13	300	20.7	300	20.7	300	20.7
35-80 psi (2.4-5.5 bar)	3/32	2.4	300	20.7	1000	69	2000	138
	1/8	3.2	300	20.7	1000	69	2000	138
	3/16	4.8	300	20.7	1000	69	1750	121
	1/4	6.4	300	20.7	1000	69	1500	103
	3/8	9.5	300	20.7	1000	69	1000	69
	1/2	13	300	20.7	750	51.7	750	51.7
70-150 psi (4.8-10.3 bar)	3/32	2.4	300	20.7	1000	69	2000	138
	1/8	3.2	300	20.7	1000	69	2000	138
	3/16	4.8	300	20.7	1000	69	2000	138
	1/4	6.4	300	20.7	1000	69	1750	121
	3/8	9.5	300	20.7	1000	69	1250	86.2
	1/2	13	300	20.7	750	51.7	750	51.7

* If inlet pressure is greater than 1000 psi, always compare against the Body Inlet Pressure Rating and Valve Disk Inlet Pressure Rating in the Product Specifications Table (Page 7).

** If the set point is 10 psi (0.69 bar) or less, the inlet pressure should remain below 100 psi (6.9 bar) to still allow for set point adjustment.

1200 Series Pressure Regulators

1227LRG
Little Pressure Regulator

Table 2: Diaphragm and Spring Casing Pressure Ratings

Pressure Limit	Body Material	Maximum Pressure	
		psi	bar
Overpressure Limit Maximum pressure above set point that may be applied without causing internal damage.	Ductile Iron	60	4.1
	LCC Steel		
Leakage Pressure Limit Maximum pressure that may be applied to the diaphragm and spring casings without causing leak to atmosphere (internal damage may still occur).	Ductile Iron	250	17.2
	LCC Steel		
Burst Pressure Limit Maximum pressure that may be applied to the diaphragm and spring casings without causing the casings to burst (leak to atmosphere and internal damage may still occur).	Ductile Iron	465	32.1
	LCC Steel	1500	103

Table 3: Cv Values

Orifice Size		Cv Value	
in.	mm	1" NPT / DN 25 Body	2" NPT / DN 50 Body
3/32	2.4	0.24	0.23
1/8	3.2	0.43	0.42
3/16	4.8	0.93	1.02
1/4	6.4	1.71	1.66
3/8	9.5	3.42	3.39
1/2	13	5.29	5.01

1200 Series Pressure Regulators

1227LRG Little Pressure Regulator

Flow Capacity Information

Calculated flow capacities for the SOR 1227LRG Little Pressure Regulator are listed in Table 4 (SCFH) and Table 5 (Nm³/h). The calculations were obtained with the assumption that the upstream and downstream piping are both the same size as the body of the regulator. Additionally, these flow capacities were calculated using natural gas as the process media (0.6 SG relative to air).

To determine the equivalent flow capacities for gases other than natural gas.

Step 1: Multiply the SCFH flow capacity from Table 4 by 0.775.

Step 2: Divide by the square root of the alternative gas' specific gravity.

Step 3: The resulting value is the equivalent flow capacity for the alternative gas.

Step 4: To convert SCFH flow capacities to units of Nm³/h, multiply the SCFH flow capacity by 0.02832.

Table 4: Flow Capacities in SCFH

Output Range	Set Point (psi)	Inlet Pressure (psi)	Orifice Size (in.)											
			1" NPT Body Size						2" NPT Body Size					
			3/32	1/8	3/16	1/4	3/8	1/2	3/32	1/8	3/16	1/4	3/8	1/2
5-20 psi (0.4-1.4 bar)	5	10	170	330	710	1100	1900	2500	170	330	710	1080	1700	2400
		15	240	390	890	1600	2500	3350	240	390	890	1250	1900	2700
		20	290	500	1160	2060	3400	4450	290	500	1160	1900	2650	3900
		30	380	670	1560	2800	4750	6900	380	670	1560	2800	3680	6500
		60	640	1170	2600	4710	8140	13700	640	1170	2600	4750	7250	17800
		75	770	1410	3150	5710	9790	14500	770	1410	3150	5700	8060	22400
	10	100	990	1800	4070	7310	12500	16000	990	1790	4070	7310	16200	28700
		15	210	375	880	1590	2480	3300	210	375	880	1220	1860	2670
		20	280	490	1150	2050	3380	4410	280	490	1150	1880	2610	3830
		30	380	670	1560	2800	4720	6840	380	670	1560	2760	3640	6460
		60	640	1170	2600	4710	8140	13700	640	1170	2600	4750	7250	17800
		75	770	1410	3150	5710	9790	14500	770	1410	3150	5700	8060	22400
		100	990	1800	4070	7310	12500	16000	990	1790	4070	7310	16200	28700
		150	1420	2580	5850	10500	17000	18000	1420	2580	5850	10500	23300	25900
		200	1850	3370	7630	13700	18000	18500	1850	3370	7630	13700	22700	24000
		300	2700	4910	11200	19800	20000		2700	4910	11200	10300	12800	
		500	4400	8090	15700	20000			4400	8090	18300	21000		
		750	5400	12000	18000				6600	12000	27200			
		1000	5800	14000					8700	16000				
		1250	6300						11000					
1500	6600						13000							
1750	6800						15000							
2000	7600						6300							

(cont.)

1200 Series Pressure Regulators

1227LRG
Little Pressure Regulator

Table 4: Flow Capacities in SCFH (cont.)

Output Range	Set Point (psi)	Inlet Pressure (psi)	Orifice Size (in.)											
			1" NPT Body Size						2" NPT Body Size					
			3/32	1/8	3/16	1/4	3/8	1/2	3/32	1/8	3/16	1/4	3/8	1/2
5-20 psi (0.4-1.4 bar)	20	30	350	620	1450	2580	4360	6290	350	620	1450	2350	4300	6110
		50	550	1000	2280	4090	7870	14100	550	1000	2280	4040	7100	12800
		60	640	1170	2640	4750	9690	14500	640	1170	2640	4750	8400	15700
		100	990	1800	4070	7310	13900	23300	990	1800	4070	7310	16200	28700
		150	1420	2580	5850	10500	17700	34200	1420	2580	5850	10500	23300	29000
		200	1850	3370	7630	13700	26600	39100	1850	3370	7630	13700	24000	33000
		300	2700	4910	11200	20100	37000		2700	4910	11200	20100	19600	
		500	4400	8090	18300	32900			4400	8090	18300	32900		
		750	6600	12000	23600				6600	12000	27200			
		1000	8900	16000					8700	16000				
		1250	10000						11000					
		1500	10400						13000					
1750	12000						15000							
2000	14000						6300							
15-40 psi (1.0-2.8 bar)	40	60	610	1090	2530	4510	9290	9420	610	1090	2530	4370	8680	13300
		75	760	1370	3080	5640	10800	16500	760	1370	3080	5540	11900	19300
		100	990	1790	4070	7310	14700	21900	990	1800	4070	7310	16200	25400
		150	1420	2580	5850	10500	20500	34500	1420	2580	5850	10500	23300	41300
		200	1850	3370	7630	13700	27100	46400	1850	3370	7630	13700	30400	53900
		300	2700	4910	11200	20100	40100	67100	2700	4910	11200	20100	44600	46000
		500	4400	8090	18300	32900	63900		4400	8090	18300	32900	22000	
		750	6600	12000	27200	39400			6600	12000	27200	28000		
		1000	8700	16000	36100				8700	16000	36100			
		1250	11000	19000					11000	19000				
		1500	13000	22000					13000	22000				
		1750	15000						15000					
2000	17000						17000							
35-80 psi (2.4-5.5 bar)	60	75	700	1230	2760	4880	8630	16100	700	1260	2760	4900	9000	12300
		100	970	1740	4010	7000	13000	19300	970	1740	4010	7000	15000	20400
		150	1420	2580	5850	10500	18900	32800	1420	2580	5850	10500	23300	35200
		200	1850	3370	7630	13700	24000	42200	1850	3370	7630	13700	30400	53900
		300	2700	4910	11200	20100	32500	69100	2700	4910	11200	20100	44600	79000
		500	4400	8090	18300	32900	64000	94300	4400	8090	18300	32900	73000	38800
		750	6600	12000	27200	43380	66000	130000	6600	12000	27200	48900	53000	32000
		1000	8700	16000	36100	50300	67700		8700	16000	36100	43000	52000	
		1250	11000	19000	45000	57000			11000	19000	45000	70000		
		1500	13000	22000	54000	63000			13000	22000	54000	43000		
		1750	15000	25000	63000				15000	25000	26000			
		2000	17000	28000					17000	28000				
35-80 psi (2.4-5.5 bar)	80	100	900	1600	3750	6650	12200	18600	900	1630	3750	6400	12800	20400
		150	1410	2580	5850	10500	21100	33600	1410	2580	5850	10500	23300	41300
		200	1850	3370	7630	13700	28400	44100	1850	3370	7630	13700	30400	53900
		300	2700	4910	11200	20100	43300	75400	2700	4910	11200	20100	44600	79000
		500	4400	8090	18300	32900	71600	110000	4400	8090	18300	32900	73000	48000
		750	6600	12000	27200	48900	105500	135000	6600	12000	27200	48900	87000	44000
		1000	8700	16000	36100	64900	118000		8700	16000	36100	65000	63000	
		1250	11000	19000	45000	80000			11000	19000	45000	63000		
		1500	13000	22000	54000	96000			13000	22000	54000	86000		
		1750	15000	25000	63000				15000	25000	63000			
		2000	17000	28000					17000	28000				

(cont.)

1200 Series Pressure Regulators

1227LRG
Little Pressure Regulator

Table 4: Flow Capacities in SCFH (cont.)

Output Range	Set Point (psi)	Inlet Pressure (psi)	Orifice Size (in.)											
			1" NPT Body Size						2" NPT Body Size					
			3/32	1/8	3/16	1/4	3/8	1/2	3/32	1/8	3/16	1/4	3/8	1/2
70-150 psi (4.8-10.3 bar)	100	150	1170	2510	5540	8710	16000	24000	1170	2510	5540	8600	16000	22000
		200	1850	3370	7630	12000	21300	34100	1850	3370	7630	13700	22000	33000
		300	2700	4910	11200	19400	30100	53200	2700	4910	11200	20100	35000	65300
		500	4400	8090	18300	31800	66500	83900	4400	8090	18300	32900	73000	129000
		750	6600	12000	27200	47300	95300	117000	6600	12000	27200	48900	108000	54000
		1000	8700	16000	36100	59700	100000		8700	16000	36100	64800	82000	
		1250	11000	19000	45000	72000	114000		11000	19000	45000	80000	110000	
		1500	13000	22000	54000	86000			13000	22000	54000	96000		
		1750	15000	25000	63000	95000			15000	25000	63000	112000		
	2000	17000	28000	71000				17000	28000	71000				
	125	150	1250	2340	5340	9470	15700	20800	1250	2340	5340	8600	16000	24000
		200	1830	3320	7550	13400	28100	32800	1830	3320	7550	13700	24000	36000
		300	2700	4910	11200	20100	36300	52600	2700	4910	11200	20100	39000	65300
		500	4400	8090	18300	32900	70800	109000	4400	8090	18300	32900	73000	129000
		750	6600	12000	27200	48900	104000	158000	6600	12000	27200	48900	108000	59000
		1000	8700	16000	36100	64800	138000	160000	8700	16000	36100	64800	58000	
		1250	11000	19000	45000	80000	145000		11000	19000	45000	80000	75000	
		1500	13000	22000	54000	96000			13000	22000	54000	96000		
		1750	15000	25000	63000	112000			15000	25000	63000	112000		
	2000	17000	28000	71000				17000	28000	71000				
	150	200	1760	3200	7290	12900	21400	33600	1760	3200	7290	13000	24000	38000
		300	2700	4910	11200	17200	40100	55900	2700	4910	11200	20100	44600	64200
		500	4400	8090	18300	32900	70300	111000	4400	8090	18300	32900	73000	129000
		750	6600	12000	27200	48900	104000	160000	6600	12000	27200	48900	108000	62000
1000		8700	16000	36100	64800	138000	162000	8700	16000	36100	64800	144000		
1250		11000	19000	45000	80000	160000		11000	19000	45000	80000	81000		
1500		13000	22000	54000	96000			13000	22000	54000	96000			
1750		15000	25000	63000	112000			15000	25000	63000	112000			
2000		17000	28000	71000				17000	28000	71000				

DISCOVER

1200 Series Pressure Regulators

1227LRG Little Pressure Regulator

Table 5: Flow Capacities in Nm³/h

Output Range	Set Point (bar)	Inlet Pressure (bar)	Orifice Size (mm)											
			DN 25 Body Size						DN 50 Body Size					
			2.4	3.2	4.8	6.4	9.5	13	2.4	3.2	4.8	6.4	9.5	13
5-20 psi (0.4-1.4 bar)	0.3	0.7	4.8	9.3	20.1	31.2	53.8	70.8	4.8	9.3	20.1	30.6	48.1	68.0
		1.0	6.8	11.0	25.2	45.3	70.8	94.9	6.8	11.0	25.2	35.4	53.8	76.5
		1.4	8.2	14.2	32.9	58.3	96.3	126.0	8.2	14.2	32.9	53.8	75.0	110.4
		2.1	10.8	19.0	44.2	79.3	134.5	195.4	10.8	19.0	44.2	79.3	104.2	184.1
		4.1	18.1	33.1	73.6	133.4	230.5	388.0	18.1	33.1	73.6	134.5	205.3	504.1
		5.2	21.8	39.9	89.2	161.7	277.3	410.6	21.8	39.9	89.2	161.4	228.3	634.4
	6.9	28.0	51.0	115.3	207.0	354.0	453.1	28.0	50.7	115.3	207.0	458.8	812.8	
	0.7	1.0	5.9	10.6	24.9	45.0	70.2	93.5	5.9	10.6	24.9	34.6	52.7	75.6
		1.4	7.9	13.9	32.6	58.1	95.7	124.9	7.9	13.9	32.6	53.2	73.9	108.5
		2.1	10.8	19.0	44.2	79.3	133.7	193.7	10.8	19.0	44.2	78.2	103.1	182.9
		4.1	18.1	33.1	73.6	133.4	230.5	388.0	18.1	33.1	73.6	134.5	205.3	504.1
		5.2	21.8	39.9	89.2	161.7	277.3	410.6	21.8	39.9	89.2	161.4	228.3	634.4
		6.9	28.0	51.0	115.3	207.0	354.0	453.1	28.0	50.7	115.3	207.0	458.8	812.8
		10.3	40.2	73.1	165.7	297.4	481.4	509.8	40.2	73.1	165.7	297.4	659.9	733.5
		13.8	52.4	95.4	216.1	388.0	509.8	523.9	52.4	95.4	216.1	388.0	642.9	679.7
		20.7	76.5	139.1	317.2	560.7	566.4		76.5	139.1	317.2	291.7	362.5	
		34.5	124.6	229.1	444.6	566.4			124.6	229.1	518.3	594.7		
		51.7	152.9	339.8	509.8				186.9	339.8	770.3			
		68.9	164.3	396.5					246.4	453.1				
		86.1	178.4						311.5					
	103.4	186.9						368.2						
	120.6	192.6						424.8						
	137.8	215.2						178.4						
	1.4	2.1	9.9	17.6	41.1	73.1	123.5	178.1	9.9	17.6	41.1	66.6	121.8	173.0
		3.4	15.6	28.3	64.6	115.8	222.9	399.3	15.6	28.3	64.6	114.4	201.1	362.5
		4.1	18.1	33.1	74.8	134.5	274.4	410.6	18.1	33.1	74.8	134.5	237.9	444.6
		6.9	28.0	51.0	115.3	207.0	393.6	659.9	28.0	51.0	115.3	207.0	458.8	812.8
		10.3	40.2	73.1	165.7	297.4	501.3	968.5	40.2	73.1	165.7	297.4	659.9	821.3
		13.8	52.4	95.4	216.1	388.0	753.3	1107.3	52.4	95.4	216.1	388.0	679.7	934.6
		20.7	76.5	139.1	317.2	569.2	1047.8		76.5	139.1	317.2	569.2	555.1	
		34.5	124.6	229.1	518.3	931.7			124.6	229.1	518.3	931.7		
		51.7	186.9	339.8	668.4				186.9	339.8	770.3			
		68.9	252.0	453.1					246.4	453.1				
		86.1	283.2						311.5					
		103.4	294.5						368.2					
		120.6	339.8						424.8					
137.8	396.5						178.4							
15-40 psi (1.0-2.8 bar)	2.7	4.1	17.3	30.9	71.6	127.7	263.1	266.8	17.3	30.9	71.6	123.8	245.8	376.7
		5.2	21.5	38.8	87.2	159.7	305.9	467.3	21.5	38.8	87.2	156.9	337.0	546.6
		6.9	28.0	50.7	115.3	207.0	416.3	620.2	28.0	51.0	115.3	207.0	458.8	719.3
		10.3	40.2	73.1	165.7	297.4	580.6	977.0	40.2	73.1	165.7	297.4	659.9	1169.6
		13.8	52.4	95.4	216.1	388.0	767.5	1314.0	52.4	95.4	216.1	388.0	860.9	1526.4
		20.7	76.5	139.1	317.2	569.2	1135.6	1900.3	76.5	139.1	317.2	569.2	1263.1	1302.7
		34.5	124.6	229.1	518.3	931.7	1809.6		124.6	229.1	518.3	931.7	623.0	
		51.7	186.9	339.8	770.3	1115.8			186.9	339.8	770.3	793.0		
		68.9	246.4	453.1	1022.4				246.4	453.1	1022.4			
		86.1	311.5	538.1					311.5	538.1				
		103.4	368.2	623.0					368.2	623.0				
		120.6	424.8						424.8					
		137.8	481.4						481.4					

(cont.)

1200 Series Pressure Regulators

1227LRG Little Pressure Regulator

Table 5: Flow Capacities in Nm³/h (cont.)

Output Range	Set Point (bar)	Inlet Pressure (bar)	Orifice Size (mm)											
			DN 25 Body Size						DN 50 Body Size					
			2.4	3.2	4.8	6.4	9.5	13	2.4	3.2	4.8	6.4	9.5	13
35-80 psi (2.4-5.5 bar)	4.1	5.2	19.8	34.8	78.2	138.2	244.4	456.0	19.8	35.7	78.2	138.8	254.9	348.3
		6.9	27.5	49.3	113.6	198.2	368.2	546.6	27.5	49.3	113.6	198.2	424.8	577.7
		10.3	40.2	73.1	165.7	297.4	535.2	928.9	40.2	73.1	165.7	297.4	659.9	996.9
		13.8	52.4	95.4	216.1	388.0	679.7	1195.1	52.4	95.4	216.1	388.0	860.9	1526.4
		20.7	76.5	139.1	317.2	569.2	920.4	1956.9	76.5	139.1	317.2	569.2	1263.1	2237.3
		34.5	124.6	229.1	518.3	931.7	1812.5	2670.6	124.6	229.1	518.3	931.7	2067.4	1098.8
		51.7	186.9	339.8	770.3	1228.5	1869.1	3681.6	186.9	339.8	770.3	1384.8	1501.0	906.2
		68.9	246.4	453.1	1022.4	1424.5	1917.3		246.4	453.1	1022.4	1217.8	1472.6	
		86.1	311.5	538.1	1274.4	1614.2			311.5	538.1	1274.4	1982.4		
		103.4	368.2	623.0	1529.3	1784.2			368.2	623.0	1529.3	1217.8		
	120.6	424.8	708.0	1784.2				424.8	708.0	736.3				
	137.8	481.4	793.0					481.4	793.0					
	5.4	6.9	25.5	45.3	106.2	188.3	345.5	526.8	25.5	46.2	106.2	181.2	362.5	577.7
		10.3	39.9	73.1	165.7	297.4	597.6	951.6	39.9	73.1	165.7	297.4	659.9	1169.6
		13.8	52.4	95.4	216.1	388.0	804.3	1248.9	52.4	95.4	216.1	388.0	860.9	1526.4
		20.7	76.5	139.1	317.2	569.2	1226.3	2135.3	76.5	139.1	317.2	569.2	1263.1	2237.3
		34.5	124.6	229.1	518.3	931.7	2027.7	3115.2	124.6	229.1	518.3	931.7	2067.4	1359.4
		51.7	186.9	339.8	770.3	1384.8	2987.8	3823.2	186.9	339.8	770.3	1384.8	2463.8	1246.1
		68.9	246.4	453.1	1022.4	1838.0	3341.8		246.4	453.1	1022.4	1840.8	1784.2	
		86.1	311.5	538.1	1274.4	2265.6			311.5	538.1	1274.4	1784.2		
103.4		368.2	623.0	1529.3	2718.7			368.2	623.0	1529.3	2435.5			
120.6		424.8	708.0	1784.2				424.8	708.0	1784.2				
137.8	481.4	793.0					481.4	793.0						
70-150 psi (4.8-10.3 bar)	6.8	10.3	33.1	71.1	156.9	246.7	453.1	679.7	33.1	71.1	156.9	243.6	453.1	623.0
		13.8	52.4	95.4	216.1	339.8	603.2	965.7	52.4	95.4	216.1	388.0	623.0	934.6
		20.7	76.5	139.1	317.2	549.4	852.4	1506.6	76.5	139.1	317.2	569.2	991.2	1849.3
		34.5	124.6	229.1	518.3	900.6	1883.3	2376.0	124.6	229.1	518.3	931.7	2067.4	3653.3
		51.7	186.9	339.8	770.3	1339.5	2698.9	3313.4	186.9	339.8	770.3	1384.8	3058.6	1529.3
		68.9	246.4	453.1	1022.4	1690.7	2832.0		246.4	453.1	1022.4	1835.1	2322.2	
		86.1	311.5	538.1	1274.4	2039.0	3228.5		311.5	538.1	1274.4	2265.6	3115.2	
		103.4	368.2	623.0	1529.3	2435.5			368.2	623.0	1529.3	2718.7		
		120.6	424.8	708.0	1784.2	2690.4			424.8	708.0	1784.2	3171.8		
		137.8	481.4	793.0	2010.7				481.4	793.0	2010.7			
	8.5	10.3	35.4	66.3	151.2	268.2	444.6	589.1	35.4	66.3	151.2	243.6	453.1	679.7
		13.8	51.8	94.0	213.8	379.5	795.8	928.9	51.8	94.0	213.8	388.0	679.7	1019.5
		20.7	76.5	139.1	317.2	569.2	1028.0	1489.6	76.5	139.1	317.2	569.2	1104.5	1849.3
		34.5	124.6	229.1	518.3	931.7	2005.1	3086.9	124.6	229.1	518.3	931.7	2067.4	3653.3
		51.7	186.9	339.8	770.3	1384.8	2945.3	4474.6	186.9	339.8	770.3	1384.8	3058.6	1670.9
		68.9	246.4	453.1	1022.4	1835.1	3908.2	4531.2	246.4	453.1	1022.4	1835.1	1642.6	
		86.1	311.5	538.1	1274.4	2265.6	4106.4		311.5	538.1	1274.4	2265.6	2124.0	
		103.4	368.2	623.0	1529.3	2718.7			368.2	623.0	1529.3	2718.7		
		120.6	424.8	708.0	1784.2	3171.8			424.8	708.0	1784.2	3171.8		
		137.8	481.4	793.0	2010.7				481.4	793.0	2010.7			
10.2	13.8	49.8	90.6	206.5	365.3	606.0	951.6	49.8	90.6	206.5	368.2	679.7	1076.2	
	20.7	76.5	139.1	317.2	487.1	1135.6	1583.1	76.5	139.1	317.2	569.2	1263.1	1818.1	
	34.5	124.6	229.1	518.3	931.7	1990.9	3143.5	124.6	229.1	518.3	931.7	2067.4	3653.3	
	51.7	186.9	339.8	770.3	1384.8	2945.3	4531.2	186.9	339.8	770.3	1384.8	3058.6	1755.8	
	68.9	246.4	453.1	1022.4	1835.1	3908.2	4587.8	246.4	453.1	1022.4	1835.1	4078.1		
	86.1	311.5	538.1	1274.4	2265.6	4248.0		311.5	538.1	1274.4	2265.6	2293.9		
	103.4	368.2	623.0	1529.3	2718.7			368.2	623.0	1529.3	2718.7			
	120.6	424.8	708.0	1784.2	3171.8			424.8	708.0	1784.2	3171.8			
	137.8	481.4	793.0	2010.7				481.4	793.0	2010.7				

1200 Series Pressure Regulators

1227LRG
Little Pressure Regulator

Repair Kits

Only genuine SOR replacement parts should be used to make repairs. Please contact your local representative for ordering information.

Orifice Replacement Kits							
Material	O-Ring Material*	3/32"	1/8"	3/16"	1/4"	3/8"	1/2"
		2.4 mm	3.2 mm	4.8 mm	6.4 mm	9.5 mm	13 mm
Aluminum	Nitrile (NBR)	6231400P	6231401P	6231402P	6231403P	6231404P	6231405P
	Fluorocarbon (FKM)	6231412P	6231413P	6231414P	6231415P	6231416P	6231417P
Stainless Steel	Nitrile (NBR)	6231406P	6231407P	6231408P	6231409P	6231410P	6231411P
	Fluorocarbon (FKM)	6231418P	6231419P	6231420P	6231421P	6231422P	6231423P

* O-Ring Material will match Diaphragm Material when ordered as a complete assembled unit.

Replacement Springs	
Part No.	Spring Color (Range)
6231032	Yellow Spring (5-20 psi / 0.4-1.4 bar)
6231033	Green Spring (15-40 psi / 1.0-2.8 bar)
6231034	Blue Spring (35-80 psi / 2.4-5.5 bar)
6231035	Red Spring (70-150 psi / 4.8-10.3 bar)

Valve Disk Repair Kits			
Part No.	Trim Material	Diaphragm Material	Valve Disk Material
6231076P	Aluminum	Nitrile (NBR)	Nitrile (NBR)
6231077P	Stainless Steel		
6231078P	Aluminum		Nylon (PA)
6231079P	Stainless Steel		

Valve Disk Repair Kit includes: Stem O-Ring and Backup O-Ring, Diaphragm Casing O-Ring, Diaphragm, Hairpin Clip, and Valve Disk Assembly.

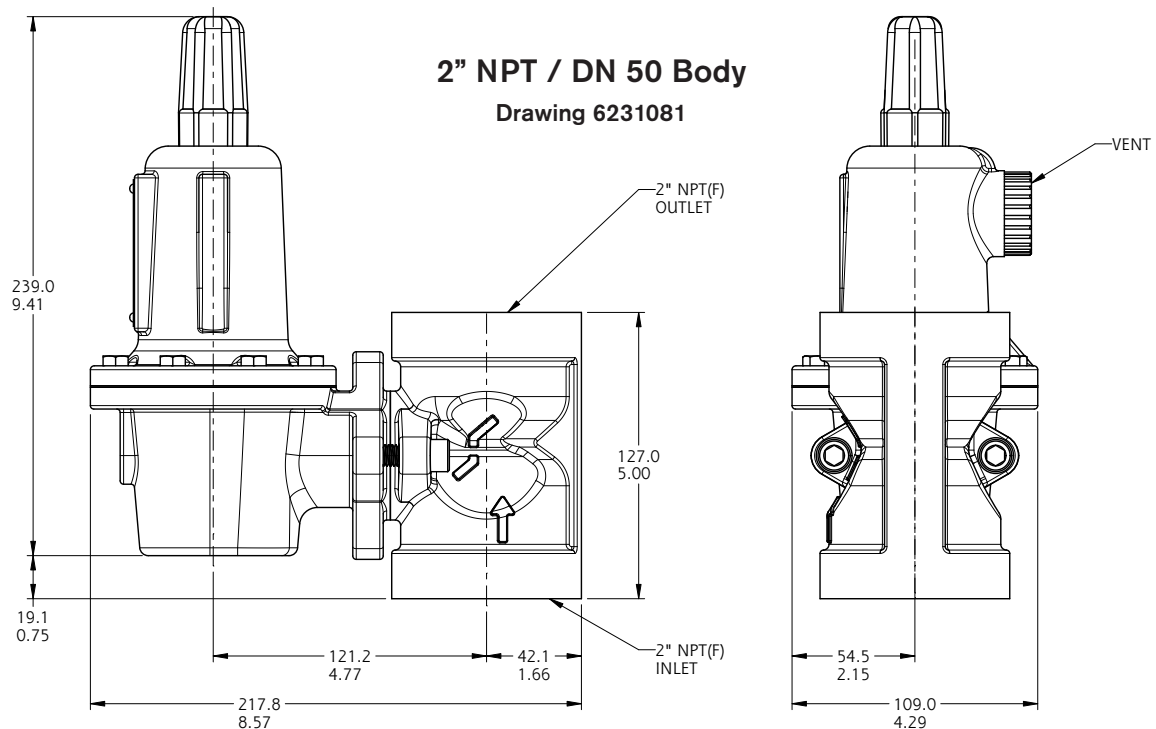
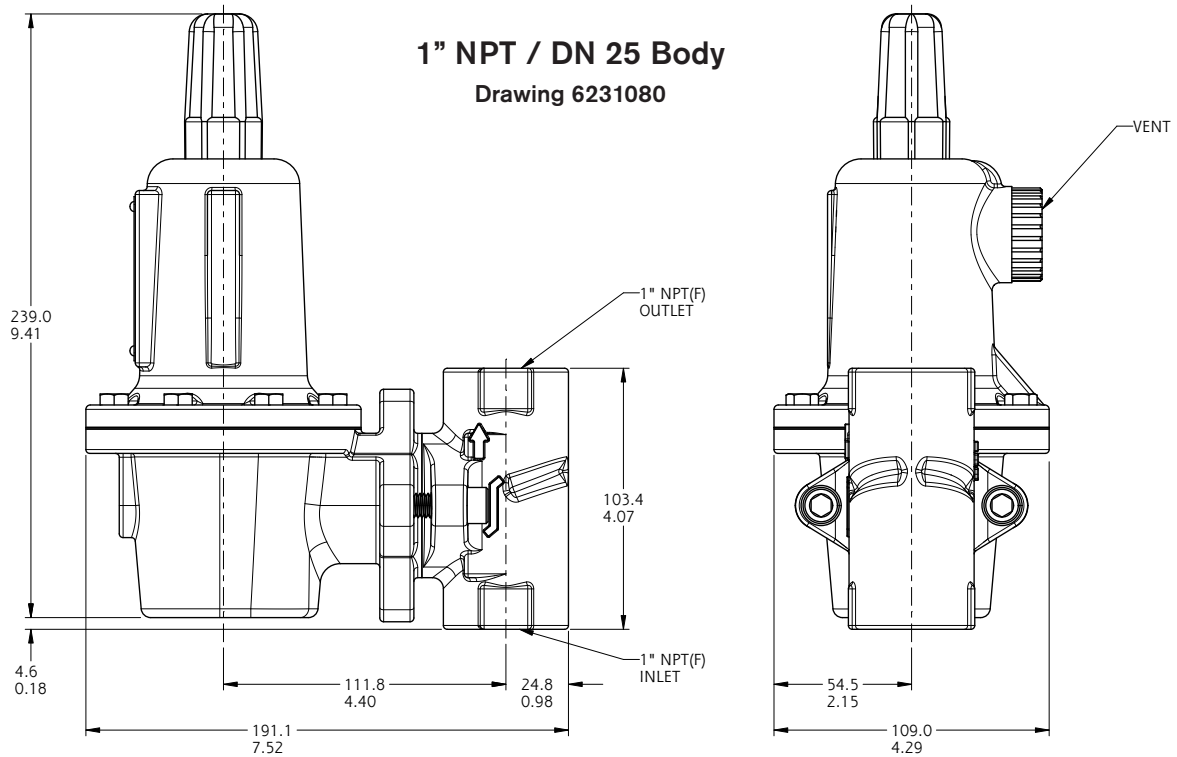
Note: The Valve Disk Repair Kits listed above use Nitrile (NBR) for the Diaphragm material. Repair Kits with alternative Valve Disk/Trim/Diaphragm Material combinations can be provided upon request. Consult factory for details.

1200 Series Pressure Regulators

1227LRG
Little Pressure Regulator

Dimensions

Dimensions shown are for reference only. They may be changed without notice. Contact the factory for certified dimension drawings. Linear = mm/in.



1200 Series Pressure Regulators

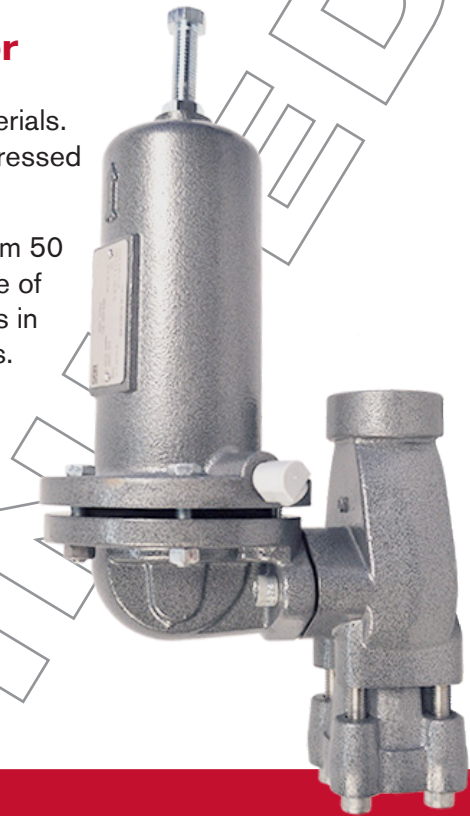
1230BRG Big Pressure Regulator

The **1230BRG Big Pressure Regulator** utilizes a similar design to the 1227LRG but provides a much broader offering of output pressure ranges and valve disk materials. Just like the 1227LRG, the 1230BRG can be used with compressed air, natural gas, or an assortment of other inert gases.

The 1230BRG is available with output pressures that span from 50 psi up to 500 psi making it suitable for use across a vast range of industries and applications, especially those utilizing regulators in series for controlled pressure reduction across multiple stages.

Features

- Powder coated body withstands demanding environments
- Valve disk and trim can be replaced without disconnecting regulator from the system
- Wide selection of output ranges allows for multiple-stage pressure cuts
- CRN and NACE MR0175 configurations available
- Warranty - 1 year



Product Specifications

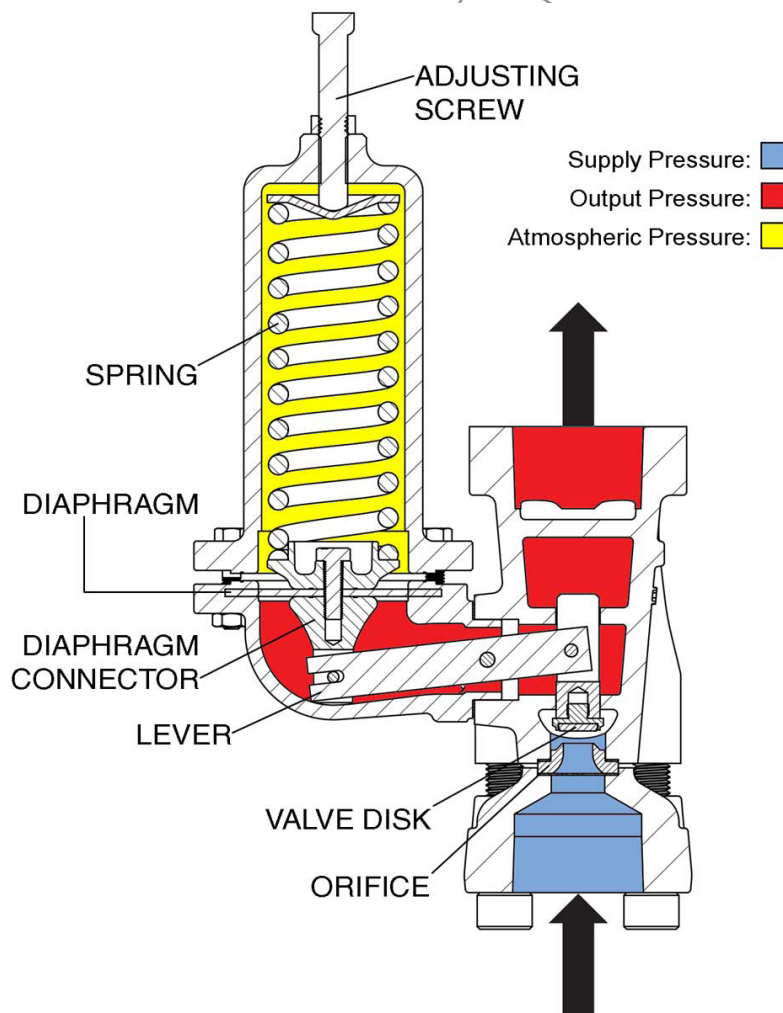
Inlet/Outlet Sizes	1" or 2" NPT (DN 25 or 50)	Temperature Limits:	
Vent Size	1/4" NPT	Elastomer Material	
Output Ranges	27-50 psi (1.9 to 3.5 bar) 46-95 psi (3.2 to 6.6 bar) 90-150 psi (6.2 to 10.3 bar) 150-200 psi (10.3 to 13.8 bar) 200-275 psi (13.8 to 19 bar) 275-500 psi (19 to 34.5 bar)	Neoprene (CR), Nitrile (NBR), & Nylon (PA)	-40°F to 180°F (-40°C to 82°C)
Orifice Sizes	1/8", 3/16", 1/4", 3/8", & 1/2"	Fluorocarbon (FKM) and PTFE	0°F to 180°F (-18°C to 82°C)
Maximum Inlet Pressure and Pressure Drop	See Table 1	Weights	1" NPT / DN 25 Body: 25 lbs. (11.3 kg) 2" NPT / DN 50 Body: 30 lbs. (13.6 kg)
Body Inlet Pressure Rating	1500 psi (103 bar)	Operating Media	Compressed Air, Natural Gas, Other Inert Gases
Maximum Outlet Pressure	500 psi (39.7 bar)	Materials of Construction:	
Maximum Outlet Pressure Above Set Point	200 psi (13.8 bar)	Body, Spring Case, Diaphragm Casing, Inlet Adapter	LCC Steel (Standard/NACE)
Cv Values	See Table 2	Valve Disk	Nitrile (NBR, Standard), Fluorocarbon (FKM), PTFE, or Nylon (PA)
Flow Capacities	See Tables 3 & 4	Diaphragm	Neoprene (CR, Standard) or Fluorocarbon (FKM)
		Trim Components:	
		Lever Assembly	Steel (Standard) or Stainless Steel (NACE)
		Connector Head Assembly	Aluminum (Standard) or Stainless Steel (NACE)
		Body Inlet Gasket	Composition (Standard/NACE)
		Valve Disk Carrier, Valve Disk Holder, Orifice	Brass (Standard) or Stainless Steel (NACE)

Design and specifications are subject to change without notice. For latest revision, see SORInc.com.

Principles of Operation

The operation of the 1230BRG pressure-reducing regulator is very similar to that of the 1227LRG; the primary difference between them is the lever-mechanism design and the orientation of the orifice. If the downstream pressure (sensed by underside of diaphragm) is below the set point of the spring, the spring force will overcome the downstream pressure force causing it to push down on the diaphragm connector; this in turn pulls upward on the valve disk through movement of the lever, pulling it further away from the orifice allowing more gas to flow through the regulator. Conversely, if the downstream pressure is at or above the set point of the spring, the spring compression force is unable to overcome the downstream pressure force acting on the underside of the diaphragm; this causes the diaphragm connector to move upward, positioning the valve disk closer to the orifice and reducing the flow of gas.

Note: The SOR 1230BRG Big Pressure Regulator does not include internal relief. Therefore, if the inlet pressure is able to exceed the outlet pressure rating, the user must provide a pressure-relieving device.

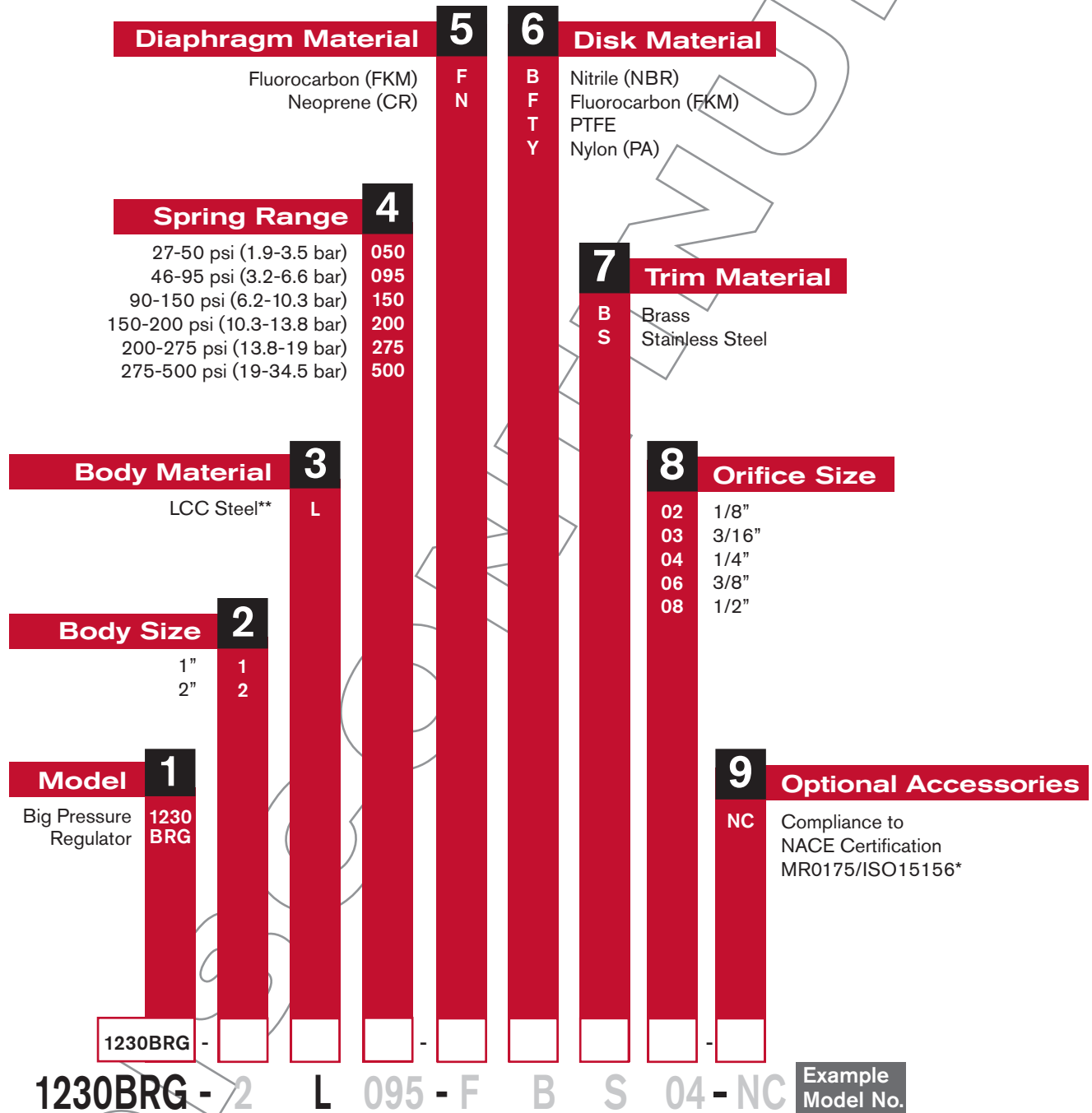


1200 Series Pressure Regulators

1230BRG
Big Pressure Regulator

How to Order

Below is the SOR quick select model number tree that provides you with all the options to configure and order a product for your application. You must select a designator for each component.



*"S" Trim Material required for NACE

**Product holds a Canadian Registration Number (CRN) for LCC steel body material.

1200 Series Pressure Regulators

1230BRG
Big Pressure Regulator

Table 1: Maximum Inlet Pressure by Orifice Size

Orifice Size		Maximum Inlet Pressure	
in.	mm	psi	bar
1/8	3.2	1500	103
3/16	4.8	1500	103
1/4	6.4	1500	103
3/8	9.5	1000	69
1/2	13	750	51.7

Table 2: Maximum Pressure Drop by Orifice Size and Disk Material

Orifice Size		Maximum Pressure Drop*							
		Nitrile (NBR) Disk		Fluorocarbon (FKM) Disk		PTFE Disk		Nylon (PA) Disk	
in.	mm	psi	bar	psi	bar	psi	bar	psi	bar
1/8	3.2	600	41.4	200	13.8	1500	103	1500	103
3/16	4.8	600	41.4	200	13.8	1500	103	1500	103
1/4	6.4	600	41.1	200	13.8	1000	69	1000	69
3/8	9.5	500	34.5	200	13.8	500	34.5	500	34.5
1/2	13	250	17.2	200	13.8	250	17.2	250	17.2

* The inlet pressure cannot exceed the sum of the set point and maximum pressure drop.

Example: For a regulator with 1/2" orifice size, NBR disk material, and set point of 100 psi, the maximum inlet pressure would be 350 psi = 250 psi (maximum pressure drop for 1/2" & NBR) + 100 psi (set point)

Table 3: Cv Values

Orifice Size		Cv Value
in.	mm	
1/8	3.2	0.49
3/16	4.8	1.11
1/4	6.4	2.03
3/8	9.5	4.61
1/2	13	8.18

1200 Series Pressure Regulators

1230BRG Big Pressure Regulator

Flow Capacity Information

Calculated flow capacities for the SOR 1230BRG pressure regulator are listed in Table 4 (SCFH) and Table 5 (Nm³/h). The calculations were obtained with the assumption that the upstream and downstream piping are both the same size as the body of the regulator. Additionally, these flow capacities were calculated using natural gas as the process media (0.6 SG relative to air).

To determine the equivalent flow capacities for gases other than natural gas.

Step 1: Multiply the SCFH flow capacity from Table 4 by 0.775.

Step 2: Divide by the square root of the alternative gas' specific gravity.

Step 3: The resulting value is the equivalent flow capacity for the alternative gas.

Step 4: To convert SCFH flow capacities to units of Nm³/h, multiply the SCFH flow capacity by 0.02832.

Table 4: Flow Capacities in SCFH

Output Range	Set Point (psi)	Inlet Pressure (psi)	Orifice Size (in.)										
			1" NPT Body Size					2" NPT Body Size					
			1/8	3/16	1/4	3/8	1/2	1/8	3/16	1/4	3/8	1/2	
27-50 psi (1.9-3.5 bar)	50	60	900	2000	3100	5200	8100	1000	2100	3200	5300	12000	
		100	1700	3500	5700	10500	13000	1800	3600	5800	10000	21000	
		200	3500	7800	11000	16000	19000	3600	7900	12000	21000	55000	
		300	5300	10500	14000	20000	23000	5500	11000	19000	48000	83000	
		400	6900	13000	17000	23000		7000	15000	27000	63000		
		500	8700	15000	19000	25000		8800	19000	34300	79700		
		600	9800	17000	21000			10000	23000	42000			
		1000	16200	22300	26300			18000	39900	70400			
	1500	19000	25000			27000	60000						
46-95 psi (3.2-6.6 bar)	50	60	800	1500	2400	4300	6400	900	1600	2500	4400	7300	
		100	1500	3100	4200	7500	10000	1600	3400	4300	7600	12000	
		200	3400	6800	9400	14000	17000	3500	6700	9600	16000	27000	
		300	5200	8900	11000	16000	20000	5300	10000	14000	27000	51000	
		400	6800	11000	15000	20000		6900	13000	21000	46000		
		500	8600	12300	16300	22000		8700	16300	26300	73300		
		600	9800	14000	19000			10000	20000	35000			
		1000	13500	18400	21700			17100	38700	68800			
		1500	18000	24000			26000	59000					
		75	100	1700	3200	5000	8000	13000	1800	3300	5200	9000	14000
	200		3500	7300	10000	16000	22000	3600	7400	11000	19000	30000	
	400		7100	14000	19000	27000		7200	15000	24000			
	500		8600	16300	21300	28700		8700	19000	31400			
	600		9900	19000	25000			10000	23000	39000			
1000	16700		25800	31000			17600	39000	69300				
	1500	23000	32000			24000	60000						
90-150 psi (6.2-10.3 bar)	100	125	2000	3600	5500	9200	13000	2100	3700	5600	9800	15000	
		150	2500	4600	6800	11000	16000	2600	4900	7400	12000	18000	
		200	3600	6600	9400	13000	22000	3700	6900	10000	17000	27000	
		300	5300	9800	14000	21000	30000	5400	10000	16000	27000	44000	
		400	7000	13000	18000	27000		7200	14000	21000	39000		
		500	8300	15500	20500	31000		8600	17500	27500	54000		
		1000	17500	26000	32600			17200	38600	66000			
		1500	25000	35000				27000	59000				

(cont.)

1200 Series Pressure Regulators

1230BRG Big Pressure Regulator

Table 4: Flow Capacities in SCFH (cont.)

Output Range	Set Point (psi)	Inlet Pressure (psi)	Orifice Size (in.)										
			1" NPT Body Size					2" NPT Body Size					
			1/8	3/16	1/4	3/8	1/2	1/8	3/16	1/4	3/8	1/2	
90-150 psi (6.2-10.3 bar)	125	150	2400	4600	6700	11000	17000	2500	5000	8100	12000	20000	
		200	3500	6800	10000	15000	23000	3600	7400	11000	19000	30000	
		300	5200	10000	15000	25000	34000	5300	11000	17000	31000	48000	
		400	7300	14500	19000	29000		7000	15000	24000	43000	65000	
		500	7900	15000	25000	36000		8800	19000	30000	59000		
		1000	16000	30300	38800			17000	39000	69300			
		1500	26000	43000				27000	60000				
90-150 psi (6.2-10.3 bar)	150	200	3400	6800	10000	16000	26000	3500	7300	11000	18000	30000	
		300	5300	10000	15000	24000	35000	5400	11000	19000	32000	52000	
		400	7100	14000	22000	34000	42000	7200	15000	26000	46000	77000	
		500	8000	18800	26300	39300		8600	19800	32800	62500		
		800	13000	29000	38000			14000	30000	54000			
		1000	17000	34000	44300			18000	39100	67700			
		1500	26000	47000				27000	60000				
150-200 psi (10.3-13.8 bar)	150	200	3400	6200	9300	16000	26000	3500	6900	10000	17000	28000	
		300	5300	10000	15000	24000	30000	5400	11000	17000	28000	47000	
		400	7100	14000	21000	32000	38000	7200	15000	24000	40000	66000	
		500	8000	16500	26300	39000		8500	18300	30250	53000		
		800	13000	27000	37000			14000	30000	51000			
		1000	16700	31000	43900			17400	38600	66400			
		1500	26000	44000				27000	60000				
	150-200 psi (10.3-13.8 bar)	200	250	4200	8300	12000	20000	30000	4300	9100	13000	23000	42000
			300	5200	10000	16000	25000	35000	5300	11000	18000	33000	52000
			600	9500	22000	34000	55000		10000	23000	40000	75000	
			700	11000	25000	40000	61500		12000	27000	47000	90000	
			800	13000	30000	43000			14000	31000	54000		
			1000	16000	37000	50000			17000	39000	69000		
			1200	20000	41000	59000			21000	48000	83000		
1500	26000	53000				27000	60000						
200-275 psi (13.8-19 bar)	200	250	4200	8200	11000	20000	29000	4300	8900	12000	23000	35000	
		300	5200	10000	14500	25000	35000	5300	11000	18000	31000	46000	
		600	9500	22000	31000	51000		10000	23000	38000	70000		
		700	11000	25000	35000	55000		12000	27000	45000	83000		
		800	13000	29000	42000			14000	31000	52000			
		1000	16000	36000	50000			17000	39000	68000			
		1200	19000	41000	55000			20000	46000	83000			
		1500	26000	51000				27000	60000				
	200-275 psi (13.8-19 bar)	250	300	4900	9000	15000	28000	42000	5000	10000	17000	30000	52000
			400	7000	14000	23000	40000	56000	7100	15000	25000	47000	76000
			500	8500	18000	29000	51000	65000	8600	19000	34000	62000	103000
			600	9500	22000	34000	59000		10000	23000	41000	78000	
			1000	16000	39000	58000			17000	40000	68000		
			1500	26000	59000				27000	60000			
	200-275 psi (13.8-19 bar)	275	300	4700	9000	15000	28000	39000	4800	10000	17000	29000	43000
			400	6900	14000	25000	40000	54000	7000	15000	26000	47000	73000
			600	9300	21000	39800	76100		10000	23000	40800	81900	
			1000	16000	39000	67000			17000	40000	68000		
			1500	26000	60000				26000	61000			

(cont.)

1200 Series Pressure Regulators

1230BRG Big Pressure Regulator

Table 4: Flow Capacities in SCFH (cont.)

Output Range	Set Point (psi)	Inlet Pressure (psi)	Orifice Size (in.)									
			1" NPT Body Size					2" NPT Body Size				
			1/8	3/16	1/4	3/8	1/2	1/8	3/16	1/4	3/8	1/2
275-500 psi (19-34.5 bar)	275	300	4500	7500	10000	20000	31000	4600	8400	13000	23000	37000
		400	6600	12000	16000	31000	43000	7000	13000	20000	32000	53000
		600	9300	18400	24300	43800		10000	23000	40800	81900	
		1000	17000	32000	43000			18000	37000	57000		
		1500	26000	46000				27000	57000			
	300	400	6600	11000	16000	31000	42000	7000	13000	21000	35000	54000
		600	9900	19000	26000	48000		10000	21000	34000	59000	
		700	11000	23000	30000	54000		12000	26000	40000	72000	
		800	13000	26000	35000	61000		14000	29000	47000	81000	
		1000	16800	32500	43800			15800	33200	53600		
		1300	22000	43000	58000			23000	50000	80000		
	400	500	8300	16000	24000	44000	62000	8800	17000	28000	49000	77000
		600	9400	21300	30000	55300		10300	22300	36000	66300	100300
		800	13000	30000	41000	76000		14000	31000	51000	95000	
		900	15000	34000	49000	85000		16000	36000	58000	110000	
		1000	17000	38000	54000			18000	40000	66000		
		1200	20000	46000	63000			21000	48000	80000		
		1400	24000	55000	76000			25000	57000	96000		
	500	550	8700	16000	26000	50000	77000	9000	18000	30000	53000	89000
		600	9500	19000	36800	57000		10000	20800	34500	62300	102000
900		15000	34000	52000	92000		16000	35000	60000	113000		
1000		17000	39000	60000	100000		18000	40000	67000	130000		
1500		26000	59000	72000			27000	60000	82000			

Table 5: Flow Capacities in Nm³/h

Output Range	Set Point (bar)	Inlet Pressure (bar)	Orifice Size (mm)									
			DN 25 Body Size					DN 50 Body Size				
			3.2	4.8	6.4	9.5	13	3.2	4.8	6.4	9.5	13
27-50 psi (1.9-3.5 bar)	3.4	4.1	25.5	56.6	87.8	147.3	229.4	28.3	59.5	90.6	150.1	339.8
		6.9	48.1	99.1	161.4	297.4	368.2	51.0	102.0	164.3	283.2	594.7
		13.8	99.1	220.9	311.5	453.1	538.1	102.0	223.7	339.8	594.7	1557.6
		20.7	150.1	297.4	396.5	566.4	651.4	155.8	311.5	538.1	1359.4	2350.6
		27.6	195.4	368.2	481.4	651.4		198.2	424.8	764.6	1784.2	
		34.5	246.4	424.8	538.1	708.0		249.2	538.1	971.4	2257.1	
		41.4	277.5	481.4	594.7			283.2	651.4	1189.4		
		68.9	458.8	631.5	744.8			509.8	1130.0	1993.7		
46-95 psi (3.2-6.6 bar)	3.4	4.1	22.7	42.5	68.0	121.8	181.2	25.5	45.3	70.8	124.6	206.7
		6.9	42.5	87.8	118.9	212.4	283.2	45.3	96.3	121.8	215.2	339.8
		13.8	96.3	192.6	266.2	396.5	481.4	99.1	189.7	271.9	453.1	764.6
		20.7	147.3	252.0	311.5	453.1	566.4	150.1	283.2	396.5	764.6	1444.3
		27.6	192.6	311.5	424.8	566.4		195.4	368.2	594.7	1302.7	
		34.5	243.6	348.3	461.6	623.0		246.4	461.6	744.8	2075.9	
		41.4	277.5	396.5	538.1				566.4	991.2		
		68.9	382.3	521.1	614.5				1096.0	1948.4		
		103.4	509.8	679.7					1670.9			

(cont.)

1200 Series Pressure Regulators

1230BRG Big Pressure Regulator

Table 5: Flow Capacities in Nm³/h (cont.)

Output Range	Set Point (bar)	Inlet Pressure (bar)	Orifice Size (mm)									
			DN 25 Body Size					DN 50 Body Size				
			3.2	4.8	6.4	9.5	13	3.2	4.8	6.4	9.5	13
46-95 psi (3.2-6.6 bar)	5.2	6.9	48.1	90.6	141.6	226.6	368.2	51.0	93.5	147.3	254.9	396.5
		13.8	99.1	206.7	283.2	453.1	623.0	102.0	209.6	311.5	538.1	849.6
		27.6	201.1	396.5	538.1	764.6		203.9	424.8	679.7		
		34.5	243.6	461.6	603.2	812.8		246.4	538.1	889.2		
		41.4	280.4	538.1	708.0			283.2	651.4	1104.5		
		68.9	472.9	730.7	877.9			498.4	1104.5	1962.6		
		103.4	651.4	906.2				679.7	1699.2			
90-150 psi (6.2-10.3 bar)	6.9	8.6	56.6	102.0	155.8	260.5	368.2	59.5	104.8	158.6	277.5	424.8
		10.3	70.8	130.3	192.6	311.5	453.1	73.6	138.8	209.6	339.8	509.8
		13.8	102.0	186.9	266.2	368.2	623.0	104.8	195.4	283.2	481.4	764.6
		20.7	150.1	277.5	396.5	594.7	849.6	152.9	283.2	453.1	764.6	1246.1
		27.6	198.2	368.2	509.8	764.6		203.9	396.5	594.7	1104.5	
		34.5	235.1	439.0	580.6	877.9		243.6	495.6	778.8	1529.3	
		68.9	495.6	736.3	923.2			487.1	1093.2	1869.1		
	103.4	708.0	991.2				764.6	1670.9				
	8.6	10.3	68.0	130.3	189.7	311.5	481.4	70.8	141.6	229.4	339.8	566.4
		13.8	99.1	192.6	283.2	424.8	651.4	102.0	209.6	311.5	538.1	849.6
		20.7	147.3	283.2	424.8	708.0	962.9	150.1	311.5	481.4	877.9	1359.4
		27.6	206.7	410.6	538.1	821.3		198.2	424.8	679.7	1217.8	1840.8
		34.5	223.7	424.8	708.0	1019.5		249.2	538.1	849.6	1670.9	
		68.9	453.1	858.1	1098.8			481.4	1104.5	1962.6		
103.4		736.3	1217.8				764.6	1699.2				
10.3	13.8	96.3	192.6	283.2	453.1	736.3	99.1	206.7	311.5	509.8	849.6	
	20.7	150.1	283.2	424.8	679.7	991.2	152.9	311.5	538.1	906.2	1472.6	
	27.6	201.1	396.5	623.0	962.9	1189.4	203.9	424.8	736.3	1302.7	2180.6	
	34.5	226.6	532.4	744.8	1113.0		243.6	560.7	928.9	1770.0		
	55.2	368.2	821.3	1076.2			396.5	849.6	1529.3			
	68.9	481.4	962.9	1254.6			509.8	1107.3	1917.3			
	103.4	736.3	1331.0				764.6	1699.2				
150-200 psi (10.3-13.8 bar)	10.3	13.8	96.3	175.6	263.4	453.1	736.3	99.1	195.4	283.2	481.4	793.0
		20.7	150.1	283.2	424.8	679.7	849.6	152.9	311.5	481.4	793.0	1331.0
		27.6	201.1	396.5	594.7	906.2	1076.2	203.9	424.8	679.7	1132.8	1869.1
		34.5	226.6	467.3	744.8	1104.5		240.7	518.3	856.7	1501.0	
		55.2	368.2	764.6	1047.8			396.5	849.6	1444.3		
		68.9	472.9	877.9	1243.2			492.8	1093.2	1880.4		
	103.4	736.3	1246.1				764.6	1699.2				
	13.8	17.2	118.9	235.1	339.8	566.4	849.6	121.8	257.7	368.2	651.4	1189.4
		20.7	147.3	283.2	453.1	708.0	991.2	150.1	311.5	509.8	934.6	1472.6
		41.4	269.0	623.0	962.9	1557.6		283.2	651.4	1132.8	2124.0	
		48.3	311.5	708.0	1132.8	1741.7		339.8	764.6	1331.0	2548.8	
		55.2	368.2	849.6	1217.8			396.5	877.9	1529.3		
		68.9	453.1	1047.8	1416.0			481.4	1104.5	1954.1		
		82.7	566.4	1161.1	1670.9			594.7	1359.4	2350.6		
103.4		736.3	1501.0				764.6	1699.2				

(cont.)

1200 Series Pressure Regulators

1230BRG Big Pressure Regulator

Table 5: Flow Capacities in Nm³/h (cont.)

Output Range	Set Point (bar)	Inlet Pressure (bar)	Orifice Size (mm)										
			DN 25 Body Size					DN 50 Body Size					
			3.2	4.8	6.4	9.5	13	3.2	4.8	6.4	9.5	13	
200-275 psi (13.8-19 bar)	13.8	17.2	118.9	232.2	311.5	566.4	821.3	121.8	252.0	339.8	651.4	991.2	
		20.7	147.3	283.2	410.6	708.0	991.2	150.1	311.5	509.8	877.9	1302.7	
		41.4	269.0	623.0	877.9	1444.3		283.2	651.4	1076.2	1982.4		
		48.3	311.5	708.0	991.2	1557.6		339.8	764.6	1274.4	2350.6		
		55.2	368.2	821.3	1189.4			396.5	877.9	1472.6			
		68.9	453.1	1019.5	1416.0			481.4	1104.5	1925.8			
		82.7	538.1	1161.1	1557.6			566.4	1302.7	2350.6			
	103.4	736.3	1444.3				764.6	1699.2					
	17.2	20.7	138.8	254.9	424.8	793.0	1189.4	141.6	283.2	481.4	849.6	1472.6	
		27.6	198.2	396.5	651.4	1132.8	1585.9	201.1	424.8	708.0	1331.0	2152.3	
		34.5	240.7	509.8	821.3	1444.3	1840.8	243.6	538.1	962.9	1755.8	2917.0	
		41.4	269.0	623.0	962.9	1670.9		283.2	651.4	1161.1	2209.0		
		68.9	453.1	1104.5	1642.6			481.4	1132.8	1925.8			
	103.4	736.3	1670.9				764.6	1699.2					
	19.0	20.7	133.1	254.9	424.8	793.0	1104.5	135.9	283.2	481.4	821.3	1217.8	
		27.6	195.4	396.5	708.0	1132.8	1529.3	198.2	424.8	736.3	1331.0	2067.4	
		41.4	263.4	594.7	1127.1	2155.2		283.2	651.4	1155.5	2319.4		
		68.9	453.1	1104.5	1897.4			481.4	1132.8	1925.8			
		103.4	736.3	1699.2				736.3	1727.5				
	275-500 psi (19-34.5 bar)	19.0	20.7	127.4	212.4	283.2	566.4	877.9	130.3	237.9	368.2	651.4	1047.8
			27.6	186.9	339.8	453.1	877.9	1217.8	198.2	368.2	566.4	906.2	1501.0
41.4			263.4	521.1	688.2	1240.4		283.2	651.4	1155.5	2319.4		
68.9			481.4	906.2	1217.8			509.8	1047.8	1614.2			
103.4			736.3	1302.7				764.6	1614.2				
20.7		27.6	186.9	311.5	453.1	877.9	1189.4	198.2	368.2	594.7	991.2	1529.3	
		41.4	280.4	538.1	736.3	1359.4		283.2	594.7	962.9	1670.9		
		48.3	311.5	651.4	849.6	1529.3		339.8	736.3	1132.8	2039.0		
		55.2	368.2	736.3	991.2	1727.5		396.5	821.3	1331.0	2293.9		
		68.9	475.8	920.4	1240.4			447.5	940.2	1518.0			
		89.6	623.0	1217.8	1642.6			651.4	1416.0	2265.6			
103.4		736.3	1387.7				764.6	1642.6					
27.6		34.5	235.1	453.1	679.7	1246.1	1755.8	249.2	481.4	793.0	1387.7	2180.6	
		41.4	266.2	603.2	849.6	1566.1		291.7	631.5	1019.5	1877.6	2840.5	
		55.2	368.2	849.6	1161.1	2152.3		396.5	877.9	1444.3	2690.4		
		62.1	424.8	962.9	1387.7	2407.2		453.1	1019.5	1642.6	3115.2		
		68.9	481.4	1076.2	1529.3			509.8	1132.8	1869.1			
		82.7	566.4	1302.7	1784.2			594.7	1359.4	2265.6			
		96.5	679.7	1557.6	2152.3			708.0	1614.2	2718.7			
		103.4	736.3	1699.2				764.6	1727.5				
34.5		37.9	246.4	453.1	736.3	1416.0	2180.6	254.9	509.8	849.6	1501.0	2520.5	
	41.4	269.0	538.1	1042.2	1614.2		283.2	589.1	977.0	1764.3	2888.6		
	62.1	424.8	962.9	1472.6	2605.4		453.1	991.2	1699.2	3200.2			
	68.9	481.4	1104.5	1699.2	2832.0		509.8	1132.8	1897.4	3681.6			
	103.4	736.3	1670.9	2039.0			764.6	1699.2	2322.2				

1200 Series Pressure Regulators

1230BRG
Big Pressure Regulator

Repair Kits

Only genuine SOR replacement parts should be used to make repairs. Please contact your local representative for ordering information.

Orifice Replacement Kits

Material	1/8"	3/16"	1/4"	3/8"	1/2"
	3.2 mm	4.8 mm	6.4 mm	9.5 mm	13 mm
Brass	6231110	6231111	6231112	6231113	6231114
Stainless Steel	6231115	6231116	6231117	6231118	6231119

Replacement Springs

Part No.	Spring Color (Range)
6231174	Red Striped Spring (27-50 psi / 1.9-3.5 bar)
6231175	Olive Striped Spring (46-95 psi / 3.2-6.6 bar)
6231176	Silver Spring (90-150 psi / 6.2-10.3 bar)
6231177	Green Striped Spring (150-200 psi / 10.3-13.8 bar)
6231178	Blue Striped Spring (200-275 psi / 13.8-19 bar)
6231179	Yellow Striped Spring (275-500 psi / 19-34.5 bar)

Disk & Diaphragm Repair Kits

Part No.	Trim Material	Diaphragm Material	Valve Disk Material
6231193P	Brass	Neoprene (CR)	Nitrile (NBR)
6231194P	Brass	Neoprene (CR)	PTFE
6231195P	Stainless Steel	Neoprene (CR)	Nitrile (NBR)
6231196P	Stainless Steel	Fluorocarbon (FKM)	PTFE

Disk & Diaphragm Repair Kit includes: Diaphragm, Casing Inlet Gasket, Body Inlet Gaskets, and Valve Disk Assembly.

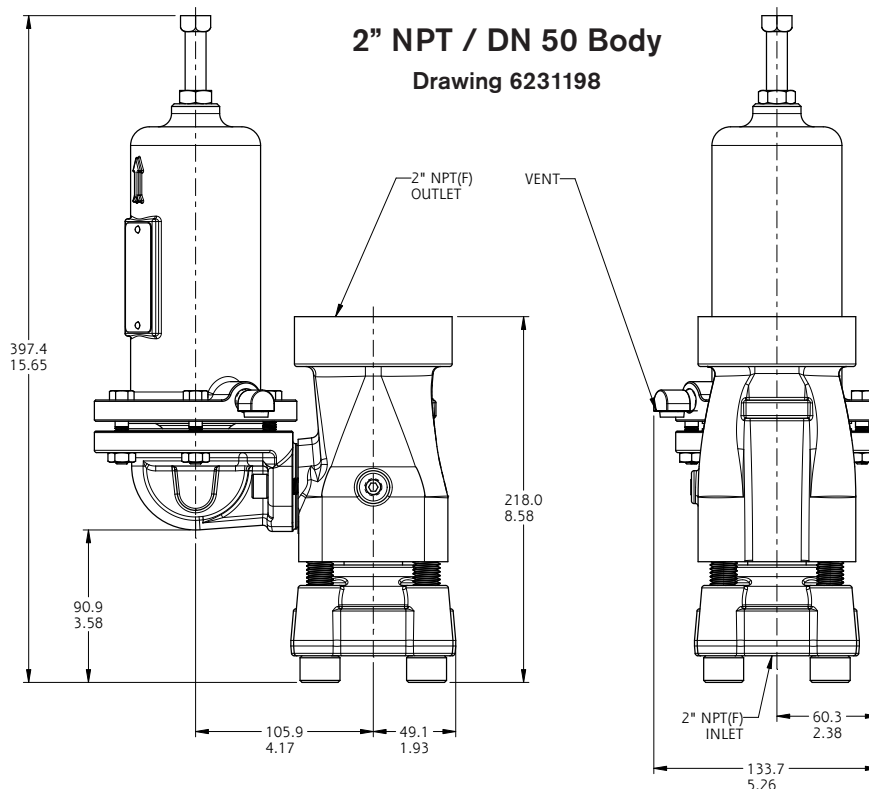
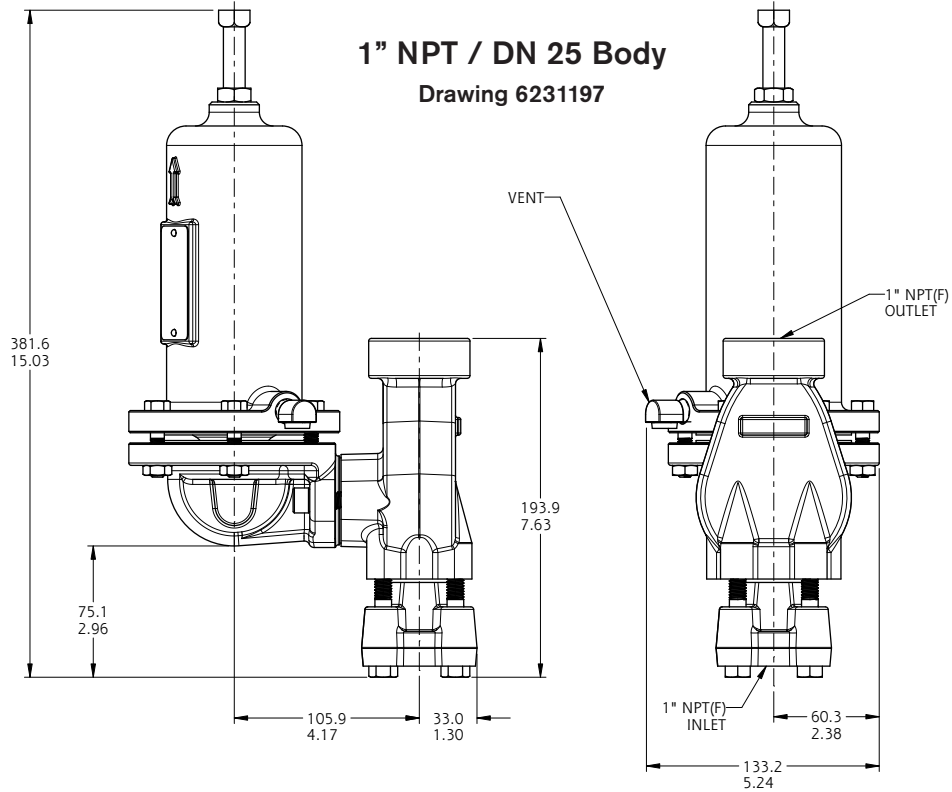
Note: Repair Kits with alternative Valve Disk/Trim/Diaphragm material combinations can be provided upon request. Consult factory for details.

1200 Series Pressure Regulators

1230BRG Big Pressure Regulator

Dimensions

Dimensions shown are for reference only. They may be changed without notice. Contact the factory for certified dimension drawings. Linear = mm/in.



1200 Series Pressure Regulators

1267AFR Air Filter Regulator

The 1267AFR Air Filter Regulator is designed to provide clean, accurate air pressure to instruments, valves, and other automatic control equipment in a lightweight, compact housing. These quality instruments are constructed of durable materials that will provide long lasting performance in industrial environments. The 1267AFR Air Filter Regulator is designed for use in systems that require clean, accurate instrument air. The 1267AFR provides pressure regulation and filtration in an integral compact package. Available in 1/4" NPT porting for normal operation and 1/2" NPT porting for high flow capacity requirements.



1/4" NPT

Features

- Compact and light weight construction
- Mounts where competitive units won't
- 1/4" NPT or 1/2" NPT version for high flow capacity
- Low air consumption lower operating costs
- Tapped exhaust option
- Rugged, corrosion resistant design functional for harsh conditions
- Warranty - 18 months
- NACE option available for 1/4" NPT version



HIGH FLOW
CAPACITY
1/2" NPT

Product Specifications

In/Out Port Size	1/4" NPT 1/2" NPT (High flow capacity) (Gauge Ports 1/4 NPT)	Effect of Supply Pressure Variation	Less than 0.25 psi (0.017 bar) for 25 psi (1.7 bar) change Less than 0.5 psi (0.035 bar) for 25 psi (1.7 bar) change
Output Ranges	0-30 psi (0 to 2 bar) 0-60 psi (0 to 4 bar) 0-120 psi (0 to 8 bar)	Temperature Limits	0°F to 160°F (-18°C to 71°C)
Maximum Supply Pressure	250 psi (17 bar)	Weight	1.2 lbs (.45 kg)
Mounting	Pipe or through body direct	Operating Media	Air, Inert Gas and Sweet Natural Gas
Filter	40 micron (5 optional)	Materials of Construction	<u>Standard</u> <u>NACE</u>
Cv Values	0.5 at 150 psi supply and 80 psi setpoint for 1/4" 2.5 at 150 psi supply and 80 psi setpoint for 1/2"	Body	Diecast Aluminum Alloy, Irridite & Baked Epoxy Finish
Exhaust Capacity	0.1 scfm (2.83 NI/min) with downstream pressure 5 psi (0.3 bar) above set point	Filter	Polyethylene Phenolic Impregnated Cellulose
Sensitivity	1" of water	Diaphragm	Nitrile Elastomer & Nylon Fabric Viton
Air Consumption	Less than 5 scfh (2.5 NI/min)	Valve Seat	Nitrile Elastomer Viton
		Additional Materials	Brass, Zinc Plated Steel, Acetal 316SS Aluminum, Heat Treated Plated Steel

Design and specifications are subject to change without notice. For latest revision, see SORInc.com.

1200 Series Pressure Regulators

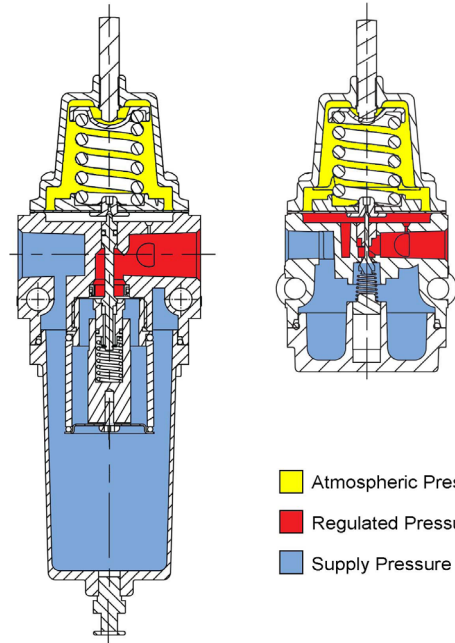
1267AFR Air Filter Regulator

Principles of Operation

Turning the adjusting screw changes the force exerted by the range spring on the diaphragm assembly. In equilibrium of set pressure, the force exerted by the range spring is balanced by the force from the output pressure acting underneath the diaphragm assembly. An unbalanced state between the output pressure and the set pressure causes a corresponding reaction in the diaphragm and supply valve assemblies.

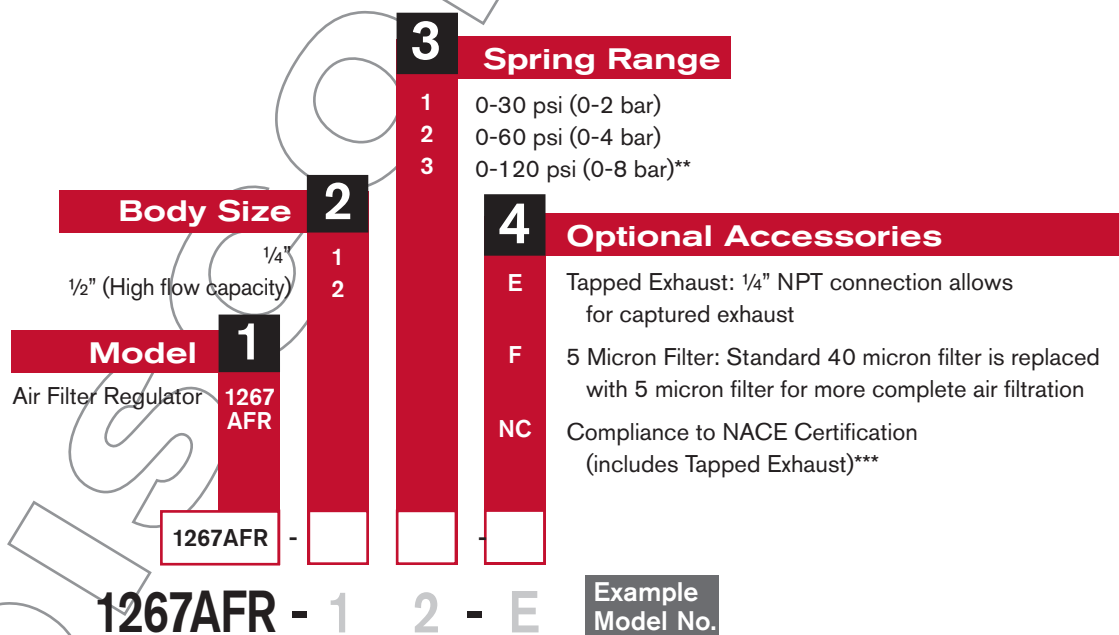
If the output pressure rises above the set pressure, an upward force is exerted on the diaphragm assembly causing the relief seat to lift and open. Excess pressure is vented to atmosphere until equilibrium is reached. If the output pressure drops below the set pressure the unbalanced force of the range spring causes a downward force on the diaphragm assembly. The supply valve then opens until the pressure builds up once more to the equilibrium condition.

Under forward flow conditions, the range spring force is balanced by the diaphragm pressure force, with the supply valve open just enough to maintain the required equilibrium pressure. When high flow occurs, a specially designed aspirator helps maintain downstream pressure and compensates for droop.



How to Order

Below is the SOR quick select model number tree that provides you with all the options to configure and order a product for your application. You must select a designator for each component



* Hand wheel to replace square head adjust screw is Part Number 1267AFR-KNOB

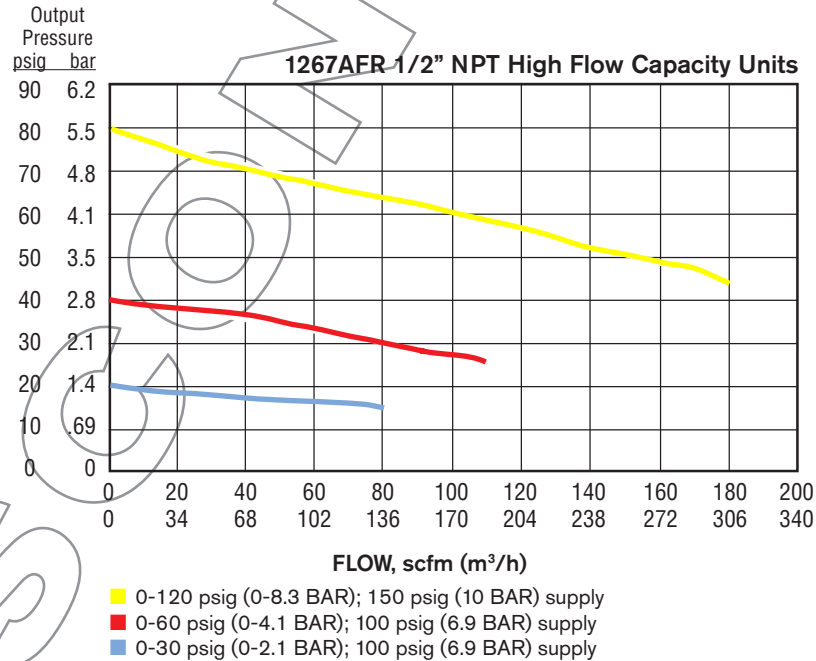
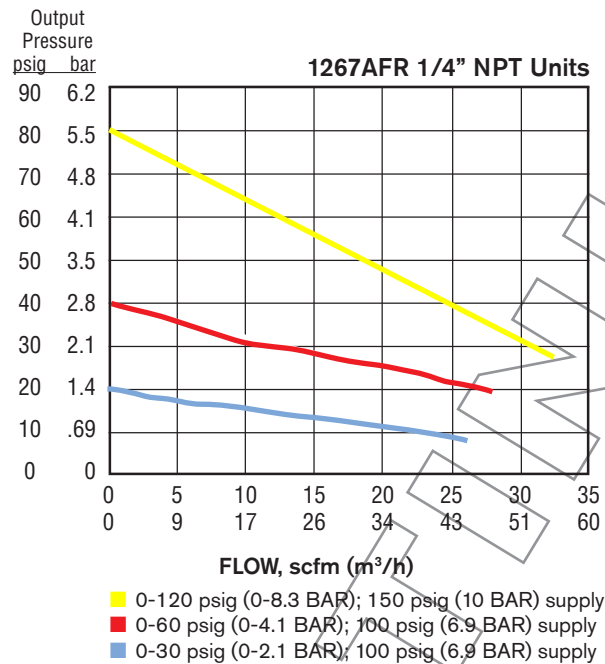
** When combined with NC option, Range 3 is 0-100 psi (0-6.9 bar)

*** Not available on 1/2" NPT version

1200 Series Pressure Regulators

1267AFR
Air Filter Regulator

Flow Charts



CONTINUED



MEASUREMENT AND CONTROL

SOR Inc. | Lenexa, KS USA | 913-888-2630 | Fax 913-888-0767 | SORInc.com

REGIONAL OFFICES

China

SOR China | Beijing, China | china@SORInc.com
+86 (10) 5820 8767 | Fax +86 (10) 58 20 8770

Middle East

SOR Measurement & Control Equipment Trading DMCC | Dubai, UAE
middleeast@SORInc.com | +971 4 363 3637 | Fax + 1 913 312 3596