Model 243-RPC Pilot Operated Regulator Brochure

Introduction

Who We Are

Utility Solutions Group is a manufacturer of natural gas regulators and relief valves based in Columbus, OH. All products are made in the USA and compliant with the requirements of the Build America, Buy America Act. Utility Solutions Group's Quality Management System is certified to ISO 9001 by Smithers Quality Assessments.

243 RPC Pilot Operated Regulator

Model 243 RPC regulators are rugged and reliable, with value-added features. Use of this principle results in exceptionally precise regulation. It is accurate within ±0.5% absolute outlet pressure from minimum to wide-open flow. Relay operation also minimizes the effects of inlet variations. Accuracy is largely unaffected by swings in inlet pressure.

The 243-RPC is made for fixed factoring, pressure factor measurement, pressure compensated metering, and other applications requiring exceptionally precise pressure control. Wherever requirements call for maximum accuracy at minimum cost, 243-RPC regulators are an excellent choice.

The Model 243-RPC, Model 243-RPC-A and Model 243-RPC-B regulators are approved with Measurement Canada.

Minimum Inlet Pressure

For the regulator to be fully operable, inlet pressure must be at least 1 ½ pounds per square inch (psi) greater than the outlet pressure.

Maximum Inlet Pressures Spring Ranges

Orifice Sizes	Maximum Inlet Pressure	Outlet Pressure
¼", ⅜", ½"	150 psi	3 ½" w.c. to 35 psi
¾"	125 psi	
1"	60 psi	
1 ¼"	30 psi	

General

Outlet Pressure Set-Point Adjustment Range	Pilot Spring	
	Spring Color	Spring Part Number
3 ½" to 6 ½" w.c.	Red	143-08-021-00
5" to 8 ½" w.c.	Blue	143-08-021-01
6" to 14" w.c.	Green	143-08-021-02
12" to 28" w.c.	Orange	143-08-021-03
1 to 2 psi	Black	143-08-021-06
1 to 5 psi	White	138-18-021-01
3 ½ to 5 psi	Aluminum	138-18-021-05
3 to 15 psi	Gray	138-18-021-04
10 to 35 psi	Brown	138-18-021-03

Pipe Sizes

Model	Description
243-RPC	Standard Construction (Page 3)
243-RPC-A	Throat Opening Construction (Page 4)
243-RPC-B	Throat Opening and Internal Control (Page 4)

Available in 1 ¼-inch, 1 ½-inch and 2-inch national pipe thread (NPT) and 2-inch Flanged.

Temperature Limits

The 243-RPC Regulator may be used for flowing gas temperatures from -20°F to 150°F.

Buried Service

The 243-RPC Regulator is not recommended for buried service.

Increased Outlet Pipe Sizes

At higher flow rates, outlet piping should be increased in size in conformance with the following table. The flow rate values are maximum for the given outlet pressures and pipe sizes.

NOTE: Refer to the example and illustration for instructions on using the table.

Capacities in SCFH:

Outlet Pressure	Pipe Size		
	1 ¼"	1 ½"	*2"
3 ½" w.c.	9,200	14,200	30,000
7" w.c.	14,200	21,000	41,600
14" w.c.	19,400	29,800	58,200
1 psi	24,600	41,600	76,500
2 psi	36,300	58,200	76,500
3 psi	41,000	76,500	76,500
5 psi	62,500	76,500	76,500
7 psi +	76,500	76,500	76,500

* Increase to 3" pipe size for capacities exceeding flows listed for 2".

Example:

From the capacity table (Page 5), a 1 ¼-inch model 243-RPC or 1 ¼-inch model 243-RPC-A has a capacity of 21,800 standard cubic feet per hour (SCFH) based on ¾-inch orifice, 7-inches water column (w.c.) outlet pressure and 25 psi inlet pressure. From the preceding table, outlet piping must be increased to 2-inch size to handle the full 21,800 SCFH.

NOTE: The maximum load does not exceed 14,200 SCFH then 1 ¼-inch pipe would be satisfactory and if it does not exceed 21,000 SCFH then 1 ½-inch pipe would be satisfactory.

The increase should be immediately downstream of the regulator. The control line should be connected at least 5 pipe diameters from the increase.

Pressure Control Accuracy

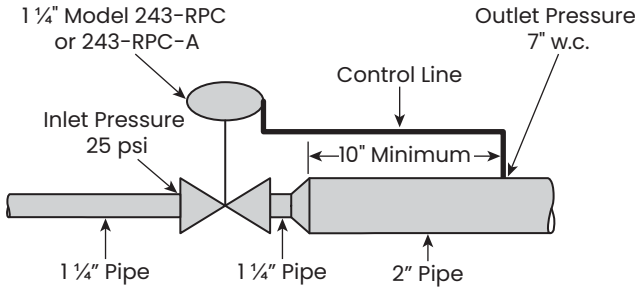
The 243-RPC and 243-RPC-A will hold outlet pressure to within ±0.5% accuracy (based on absolute pressure) from set-point flow to the capacities given in the tables on Pages 5, 6, and 7. Set-point in all cases is based on a flow of 250 SCFH.

Accuracy of ±0.5% also applies to the 243-RPC-B except for outlet pressures below 1 psi and/or flows above 20,000 SCFH where-in accuracy is within ±2%.

Generally, if pipe runs are long and/or many fittings and accessories are used, sizing should be checked to avoid excessive pressure loss. This applies to both inlet and outlet piping.

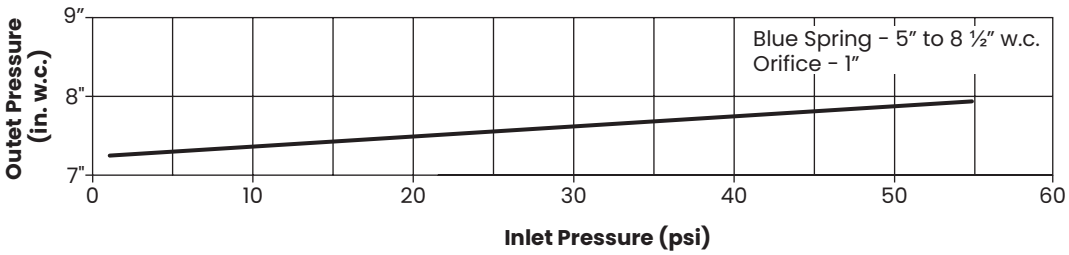
Example illustration to the right:

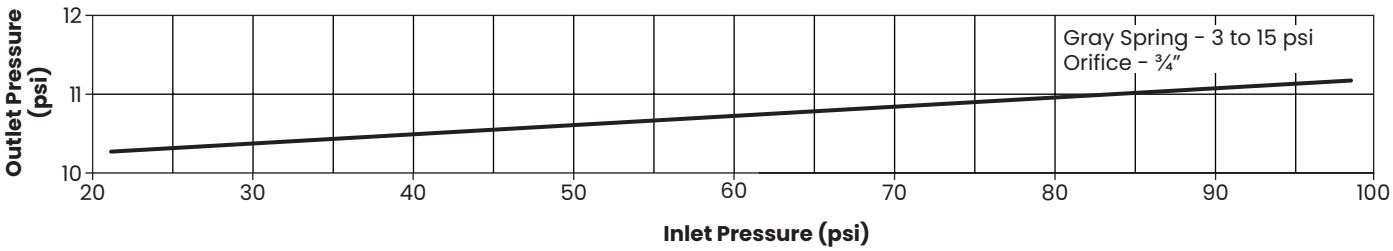
1 ¼" Model 243-RPC or 243-RPC-A



Inlet Pressure Effect

The following curves illustrate the effects of changing inlet pressure on the 243-RPC. As seen in the illustration, excellent accuracy is achieved despite wide inlet variations.

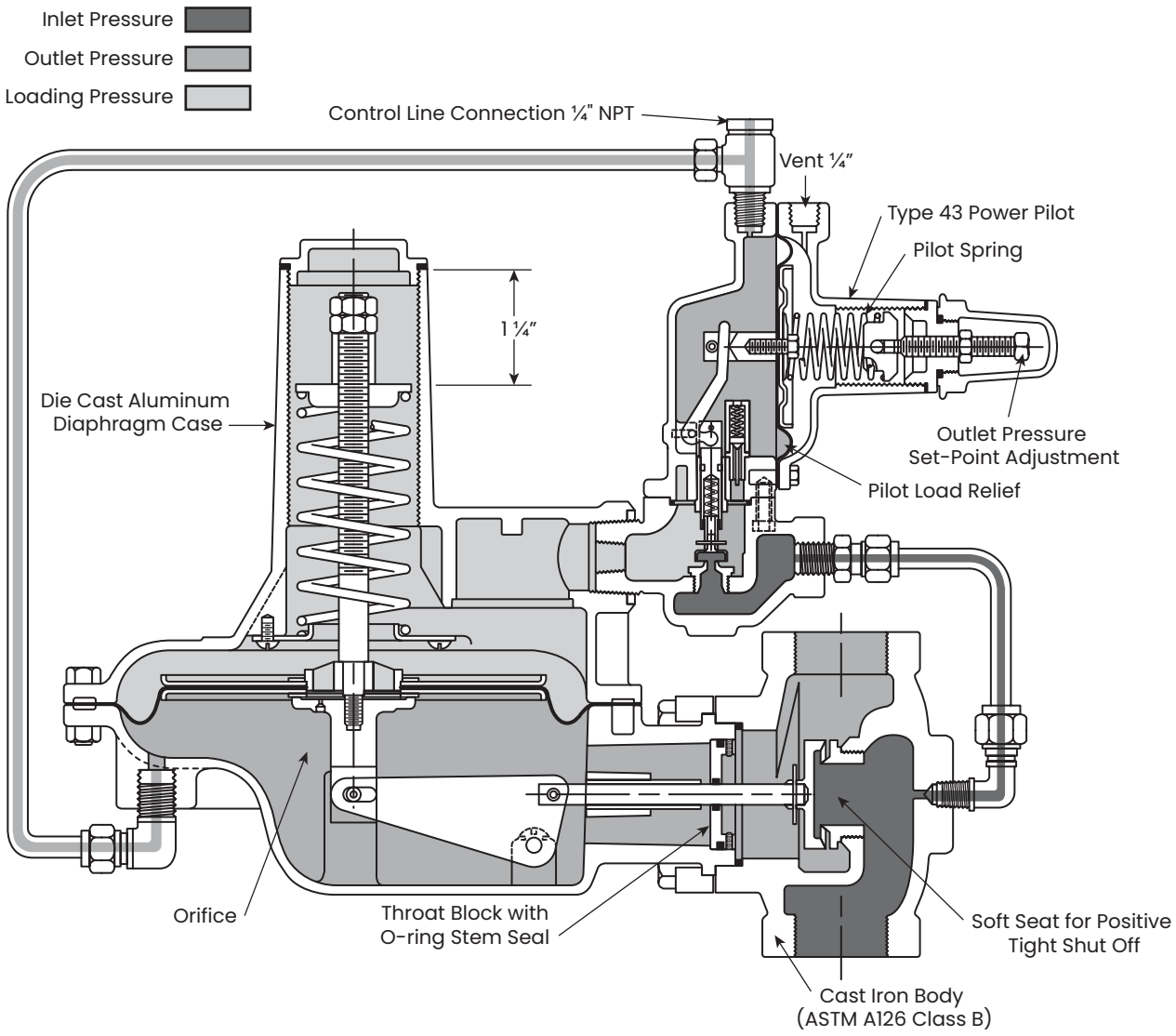




While curves for the other orifice sizes and spring ranges are not exactly the same, the differences are minor and the excellent performance shown is quite representative.

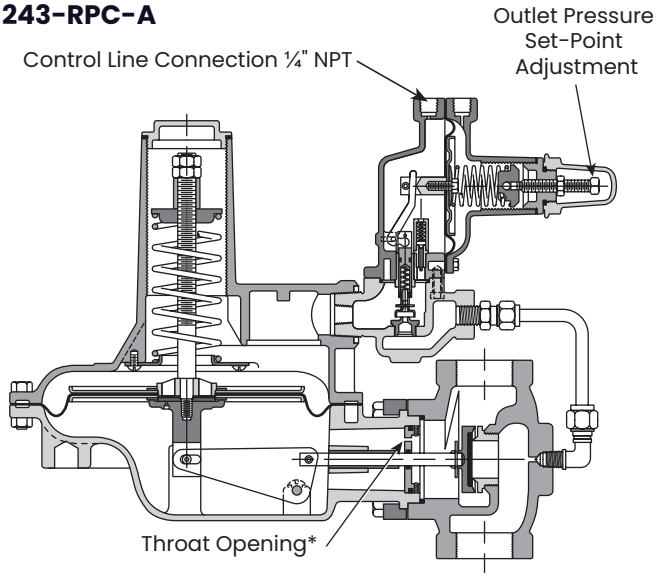
The variations result mainly from the inlet pressure effect on the pilot, and this can be largely eliminated with a load limited regulator. It should be installed on the inlet supply line to the pilot, as shown in the typical installation on Pages 3 and 9.

Model 243-RPC



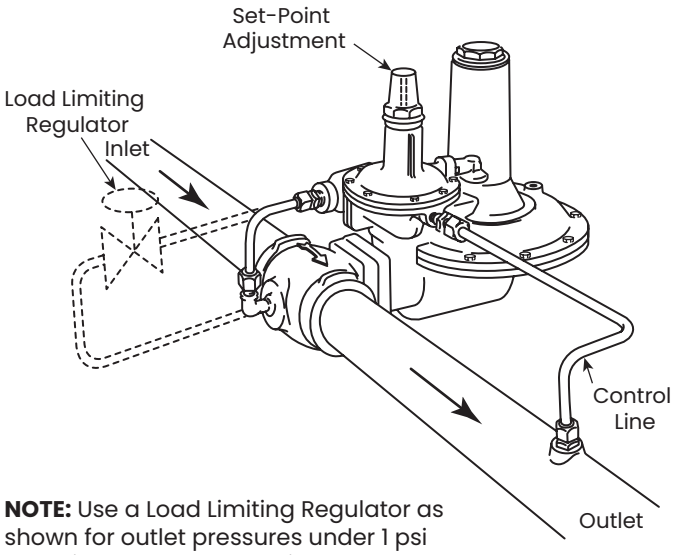
Other Variations

243-RPC-A



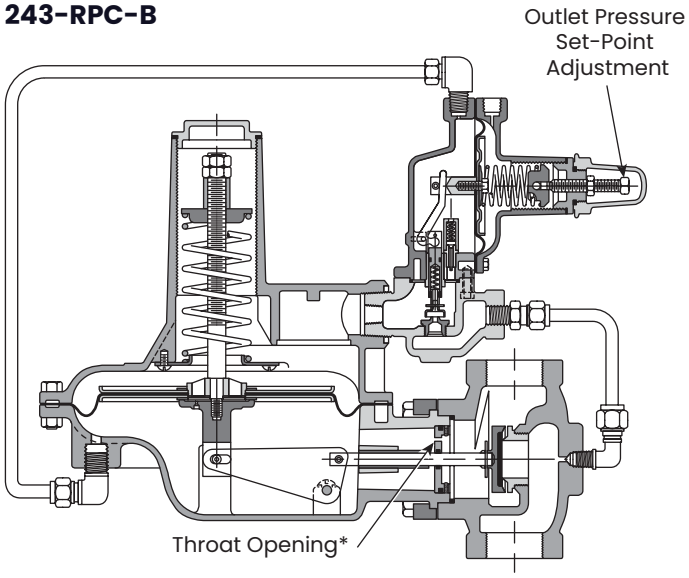
The 243-RPC-A has a throat opening for a faster response speed. Hence, it will react more quickly to fast load changes as, for example, on snap acting boilers.

Typical installation of the 243-RPC-A shown below:



NOTE: Use a Load Limiting Regulator as shown for outlet pressures under 1 psi when inlet exceeds 40 psi.

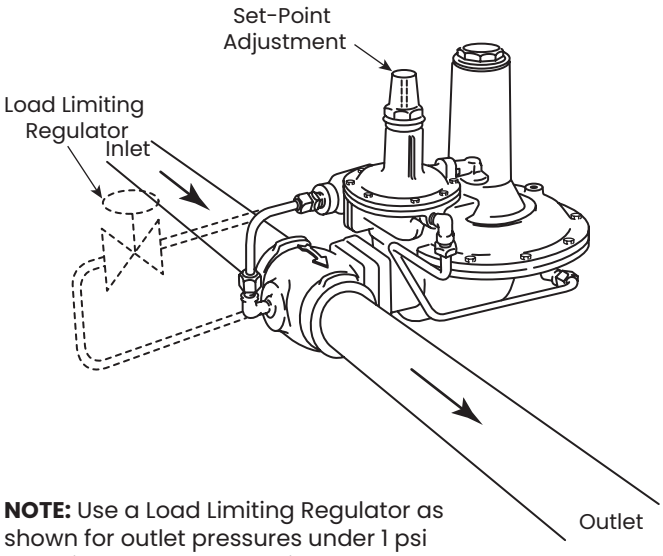
243-RPC-B



The 243-RPC-B does not require a control line. This simplifies installation. Also, the throat opening means a faster response speed.

NOTE: As shown on the capacity tables on Pages 5, 6 and 7, there is a slight loss in accuracy at outlet pressure under 1 psi and capacities above 20,000 SCFH.

Typical installation of the 243-RPC-B shown below:



NOTE: Use a Load Limiting Regulator as shown for outlet pressures under 1 psi when inlet exceeds 40 psi.

* Internal construction of the 243-RPC-A and 243-RPC-B differ from the 243-RPC by addition of an opening in the throat block. The throat opening limits monitor set usage to the downstream location only (see Monitoring, Page 9).

Models 243-RPC Capacity Tables

Measurements in SCFH of Natural Gas (0.6 Specific Gravity - 14.65 psi - 60°F)

Inlet Pressure psi	Outlet Pressure	Models 243-RPC and 243-RPC-A						Model 243-RPC-B					
		1 ¼", 1 ½", and 2"				1 ½" and 2"		2"					
		Orifice Sizes						Orifice Sizes					
		¼"	⅜"	½"	¾"	1"	1 ¼"	¼"	⅜"	½"	¾"	1"	1 ¼"
2	3 ½" w.c.	590	1,300	2,340	4,950	8,100	9,400	590	1,300	2,340	4,950	8,100	9,400
	7" w.c.	575	1,250	2,250	4,800	7,800	9,000	575	1,250	2,250	4,800	7,800	9,000
	14" w.c.	510	1,150	2,000	4,450	7,300	8,500	510	1,150	2,000	4,450	7,300	8,500
3	3 ½" w.c.	750	1,630	2,950	6,250	10,200	11,900	750	1,630	2,950	6,250	10,200	11,900
	7" w.c.	700	1,630	2,900	6,150	10,000	11,700	700	1,630	2,900	6,150	10,000	11,700
	14" w.c	700	1,540	2,750	5,900	9,800	11,200	700	1,540	2,750	5,900	9,800	11,200
	1 psi	600	1,380	2,450	5,250	8,600	10,000	600	1,380	2,450	5,250	8,600	10,000
5	3 ½" w.c.	1,000	2,220	3,950	8,450	13,800	16,000	1,000	2,220	3,950	8,450	13,800	16,000
	7" w.c.	1,000	2,200	3,900	8,350	13,700	16,000	1,000	2,200	3,900	8,350	13,700	16,000
	14" w.c	960	2,140	3,850	8,200	13,500	15,600	960	2,140	3,850	8,200	13,500	15,600
	1 psi	910	2,100	3,750	7,850	12,900	15,000	910	2,100	3,750	7,850	12,900	15,000
	2 psi	800	1,760	3,200	6,750	11,000	12,900	800	1,760	3,200	6,750	11,000	12,900
	3 psi	640	1,450	2,600	5,550	9,100	10,600	640	1,450	2,600	5,550	9,100	10,600
7	3 ½" w.c.	1,220	2,720	4,900	10,300	17,000	19,700	1,220	2,720	4,900	10,300	17,000	19,700
	7" w.c.	1,220	2,720	4,850	10,300	16,800	19,700	1,220	2,720	4,850	10,300	16,800	19,700
	14" w.c	1,210	2,650	4,750	10,100	16,500	19,500	1,210	2,650	4,750	10,100	16,500	19,500
	1 psi	1,160	2,600	4,650	9,850	16,200	19,000	1,160	2,600	4,650	9,850	16,200	19,000
	2 psi	1,090	2,350	4,300	9,100	14,800	17,300	1,090	2,350	4,300	9,100	14,800	17,300
	3 psi	970	2,100	3,800	8,050	13,200	15,400	970	2,100	3,800	8,050	13,200	15,400
	5 psi	680	1,550	2,750	5,900	9,800	11,200	680	1,550	2,750	5,900	9,800	11,200
10	3 ½" w.c.	1,550	3,400	6,000	12,800	21,000	24,500	1,550	3,400	6,000	12,800	20,000	22,000
	7" w.c.	1,550	3,400	6,000	12,800	21,000	24,500	1,550	3,400	6,000	12,800	20,000	23,400
	14" w.c	1,470	3,250	5,900	12,500	20,400	23,700	1,470	3,250	5,900	12,500	20,400	23,700
	1 psi	1,420	3,220	5,800	12,350	20,200	23,500	1,420	3,220	5,800	12,350	20,200	23,500
	2 psi	1,410	3,100	5,600	11,850	19,700	22,600	1,410	3,100	5,600	11,850	19,700	22,600
	3 psi	1,350	3,000	5,350	11,350	18,500	21,500	1,350	3,000	5,350	11,350	18,500	21,500
	5 psi	1,140	2,600	4,650	9,850	16,200	18,800	1,140	2,600	4,650	9,850	16,200	18,800
	7 psi	860	2,000	3,550	7,550	12,400	14,500	860	2,000	3,550	7,550	12,400	14,500
15	1 psi or less	2,000	4,300	7,700	16,300	26,700	31,200	2,000	4,300	7,700	16,300	Table B*	Table A*
	2 psi	1,880	4,200	7,500	15,950	26,000	30,400	1,880	4,200	7,500	15,950	26,000	30,400
	3 psi	1,840	4,000	7,300	15,500	25,400	29,500	1,840	4,000	7,300	15,500	25,400	29,500
	5 psi	1,700	3,800	6,800	14,500	23,600	27,500	1,700	3,800	6,800	14,500	23,600	27,500
	7 psi	1,580	3,550	6,300	13,400	22,000	25,600	1,580	3,550	6,300	13,400	22,000	25,600
	10 psi	1,230	2,850	5,000	10,700	17,500	20,400	1,230	2,850	5,000	10,700	17,500	20,400

* See Capacity Table on Page 7

Models 243-RPC Capacity Tables

Measurements in SCFH of Natural Gas (0.6 Specific Gravity - 14.65 psi - 60°F) (Continued)

Inlet Pressure psi	Outlet Pressure	Models 243-RPC and 243-RPC-A						Model 243-RPC-B					
		1 ¼", 1 ½", and 2"				1 ½" and 2"		2"					
		Orifice Sizes						Orifice Sizes					
		¼"	⅜"	½"	¾"	1"	1 ¼"	¼"	⅜"	½"	¾"	1"	1 ¼"
20	3 psi or less	2,300	5,000	9,000	19,000	31,200	36,400	2,300	5,000	9,000	19,000	Table B*	Table A*
	5 psi	2,150	4,900	8,800	18,700	30,500	35,600	2,150	4,900	8,800	18,700	30,500	35,600
	7 psi	2,100	4,600	8,300	17,500	28,600	33,300	2,100	4,600	8,300	17,500	28,600	33,300
	10 psi	1,850	4,250	7,600	16,000	26,200	30,500	1,850	4,250	7,600	16,000	26,200	30,500
	15 psi	1,350	3,100	5,500	11,700	19,100	22,300	1,350	3,100	5,500	11,700	19,100	22,300
25	5 psi or less	2,600	5,800	10,300	21,800	35,700	41,600	2,600	5,800	10,300	Table C*	Table B*	Table A*
	7 psi	2,500	5,650	10,000	21,400	35,000	41,000	2,500	5,650	10,000	21,400	35,000	41,000
	10 psi	2,350	5,300	9,450	20,000	32,700	38,300	2,350	5,300	9,450	20,000	32,700	38,300
	15 psi	2,000	4,750	8,200	17,200	28,200	32,700	2,000	4,750	8,200	17,200	28,200	32,700
	20 psi	1,450	3,300	5,900	12,400	20,200	23,700	1,450	3,300	5,900	12,400	20,200	23,700
30	7 psi or less	2,950	6,500	11,600	24,500	40,200	47,000	2,950	6,500	11,600	Table C*	Table B*	Table A*
	10 psi	2,850	6,400	11,300	24,000	39,400	46,000	2,850	6,400	11,300	24,000	39,400	46,000
	15 psi	2,550	5,750	10,000	21,700	35,500	41,500	2,550	5,750	10,000	21,700	35,500	41,500
	20 psi	2,180	4,900	8,750	18,500	30,400	35,400	2,180	4,900	8,750	18,500	30,400	35,400
	25 psi	1,550	3,600	6,300	13,200	21,600	25,400	1,550	3,600	6,300	13,200	21,600	25,400
40	10 psi or less	3,600	7,950	14,200	30,000	49,200	—	3,600	7,950	14,200	Table C*	Table B*	—
	15 psi	3,500	7,800	14,000	29,500	48,500	—	3,500	7,800	14,000	29,500	48,500	—
	20 psi	3,200	7,200	12,800	27,200	44,500	—	3,200	7,200	12,800	27,200	44,500	—
	25 psi	3,000	6,600	11,700	24,500	40,500	—	3,000	6,600	11,700	24,500	40,500	—
	30 psi	2,420	5,400	9,800	20,400	33,400	—	2,420	5,400	9,800	20,400	33,400	—
	35 psi	1,720	3,900	7,000	14,800	24,300	—	1,720	3,900	7,000	14,800	24,300	—
50	15 psi or less	4,300	9,400	16,800	35,500	58,200	—	4,300	9,400	16,800	Table C*	Table B*	—
	20 psi	4,150	9,250	16,500	35,000	57,400	—	4,150	9,250	16,500	35,000	57,400	—
	25 psi	3,850	8,600	15,400	32,500	53,200	—	3,850	8,600	15,400	32,500	53,200	—
	30 psi	3,600	8,100	14,500	30,500	50,000	—	3,600	8,100	14,500	30,500	50,000	—
	35 psi	3,200	7,200	13,000	27,100	44,600	—	3,200	7,200	13,000	27,100	44,600	—
60	20 psi or less	4,900	10,900	19,400	41,000	67,200	—	4,900	10,900	19,400	Table C*	Table B*	—
	25 psi	4,850	10,500	19,000	40,500	66,000	—	4,850	10,500	19,000	40,500	66,000	—
	30 psi	4,650	10,000	18,500	39,000	63,500	—	4,650	10,000	18,500	39,000	63,500	—
	35 psi	4,300	9,800	17,000	36,400	59,500	—	4,300	9,800	17,000	36,400	59,500	—
80	35 psi or less	6,250	13,800	24,600	52,000	—	—	6,250	13,800	Table D*	Table C*	—	—
100	35 psi or less	7,600	16,700	29,800	62,500	—	—	7,600	16,700			—	—
125	35 psi or less	9,200	20,400	36,300	76,500	—	—	9,200	20,400			—	—
150	35 psi or less	10,500	23,000	41,000	—	—	—	10,500	23,000		—	—	—

* See Capacity Table on Page 7

Models 243-RPC Capacity Tables

Measurements in SCFH of Natural Gas (0.6 Specific Gravity - 14.65 psi - 60°F) (Continued)

Table and Orifice	Inlet Pressure psi	2" Model 243-RPC-B													
		Outlet Pressure													
		3 ½" w.c.	7" w.c.	14" w.c.	1 psi	2 psi	3 psi	5 psi	7 psi	10 psi	15 psi	20 psi	25 psi	30 psi	35 psi
Table A (1 ¼" Orifice)	15	22,000	24,000	28,000	30,000	30,400	29,500	27,500	25,600	20,400	—	—	—	—	—
	20	22,000	26,000	30,000	35,000	35,600	35,600	35,600	33,300	30,500	22,300	—	—	—	—
	25	22,000	26,000	30,000	35,000	38,000	41,000	41,000	41,000	38,300	32,700	23,700	—	—	—
	30	22,000	26,000	30,000	35,000	39,000	43,000	47,000	47,000	46,000	41,500	35,400	25,400	—	—
Table B (1" Orifice)	15	20,000	20,000	21,600	24,000	26,000	25,400	23,600	22,000	17,500	—	—	—	—	—
	20	20,000	20,250	21,800	28,000	29,000	30,000	30,500	28,600	26,200	19,100	—	—	—	—
	25	20,000	20,500	22,000	28,500	30,000	32,000	34,000	35,000	32,700	28,200	20,200	—	—	—
	30	20,000	21,600	23,500	29,500	32,000	34,000	36,000	38,000	39,400	35,500	30,400	21,600	—	—
	40	20,000	23,000	26,000	30,000	33,000	36,000	38,500	41,000	46,000	48,500	44,500	40,500	33,400	24,300
	50	20,000	23,500	27,000	30,000	33,000	36,000	39,000	43,000	48,000	52,000	57,400	53,200	50,000	44,600
	60	20,000	24,000	28,000	30,000	33,000	36,000	40,000	45,000	50,000	52,000	60,000	66,000	63,500	59,500
Table C (¾" Orifice)	25	20,000	20,500	21,000	21,800	21,800	21,800	21,800	21,400	20,000	17,200	12,400	—	—	—
	30	20,000	21,600	22,500	23,500	24,500	24,500	24,500	24,500	24,500	21,700	18,500	13,200	—	—
	40	20,000	23,000	26,000	28,500	29,500	29,500	29,500	29,500	29,500	29,500	27,200	24,500	20,400	14,800
	50	20,000	23,500	27,000	30,000	33,000	35,000	35,000	35,000	35,000	35,000	35,000	32,500	30,500	27,100
	60	20,000	24,000	28,000	30,000	33,000	36,000	40,000	40,500	40,500	40,500	40,500	40,500	39,000	36,400
	80	20,000	24,000	29,000	30,000	35,000	38,000	41,000	45,000	48,000	50,000	52,000	52,000	52,000	52,000
	100	20,000	24,000	29,000	30,000	35,000	38,000	41,000	45,000	50,000	53,000	56,000	56,000	62,500	62,500
	125	20,000	24,000	29,000	30,000	35,000	38,000	41,000	45,000	60,000	64,000	68,000	72,000	76,500	76,500
Table D (½" Orifice)	80	20,000	24,000	24,600	24,600	24,600	24,600	24,600	24,600	24,600	24,600	24,600	24,600	24,600	24,600
	100	20,000	24,000	27,000	28,500	28,500	28,500	28,500	28,500	28,500	28,500	28,500	28,500	28,500	28,500
	125	20,000	24,000	27,000	30,000	35,000	36,300	36,300	36,300	36,300	36,300	36,300	36,300	36,300	36,300
	150	20,000	24,000	27,000	30,000	35,000	36,300	41,000	41,000	41,000	41,000	41,000	41,000	41,000	41,000

Maximum Emergency Pressure

The maximum pressure the regulator inlet may be subject to under abnormal conditions without causing damage to the regulator is the maximum inlet pressure (from the table on Page 1) plus 10 psi.

The maximum pressure the diaphragm may be subject to without causing damage to the internal parts of the regulator are:

¼" through ¾" orifices ..... 175 psi
1" orifice ..... 110 psi
1 ¼" orifice ..... 80 psi

The maximum pressure that the control line connection can be subjected to without causing damage is:

243-RPC and 243-RPC-A ..... Set-point +5 psi

The maximum outlet pressure that the regulator can be subjected to without causing damage is:

243-RPC-A and 243-RPC-B ..... Set-point +5 psi

NOTE: Set-point is defined as the outlet pressure regulator is adjusted to deliver.

The maximum pressure that cam be safely contained by the diaphragm case is:

Maximum pressure ..... 45 psi

NOTE: "Safely contained" means no leakage as well as no bursting.

Before using any of the above data, make sure this entire section is clearly understood.

CAUTION

If any of the pressure limits are exceeded, the regulator must be taken out of service and inspected. All damaged or otherwise unsatisfactory parts must be repaired or replaced.

Overpressurization Protection

The method of protection can be a relief valve, monitor regulator, shutoff device, or similar mechanism. These protect the downstream piping system and the regulators low-pressure chambers against over-pressurization due to the possible regulator malfunction or failure to achieve complete lockup. The allowable outlet pressure is the lowest of the maximum pressures permitted by federal and state codes, Utility Solutions Group document USG-IG-038, or other applicable standards.

Capacities at Other Pressures

Capacity for pressure reductions not listed in the table can be calculated with the following formulas:

$Q = K\sqrt{P_o(P_i - P_o)}$ ..... (for P_i/P_o less than 1.894)

$Q = \frac{K P_i}{2}$ ..... (for P_i/P_o less than 1.894)

Q = Full open capacity in SCFH of 0.6 specific gravity natural gas

P_i = absolute inlet pressure (psi)

P_o = absolute outlet pressure (psi)

Orifice Size	¼"	⅜"	½"	¾"	1"	1 ¼"
K	132	292	520	1,100	1,800	2,480

Other Gases

243-RPC regulators are mainly used on natural gas. However, they perform equally as well on liquid propane gas (LPG), nitrogen gas (N_2), dry carbon dioxide (CO_2), air and others.

Type of Gas	Correction Factor
Air (Specific Gravity 1.0)	0.77
Propane (Specific Gravity 1.53)	0.63
1350 BTU Propane-Air Mix (Specific Gravity 1.20)	0.71
Nitrogen (Specific Gravity 0.97)	0.79
Dry Carbon Dioxide (Specific Gravity 1.52)	0.63

For other non-corrosive gases, use the following formula:

$$\text{Correction factor} = \sqrt{\frac{0.60}{\text{Specific gravity of the gas}}}$$

For use with gases not listed above, please contact your Utility Solutions Group Representative or Authorized Distributor for recommendations.

Monitoring

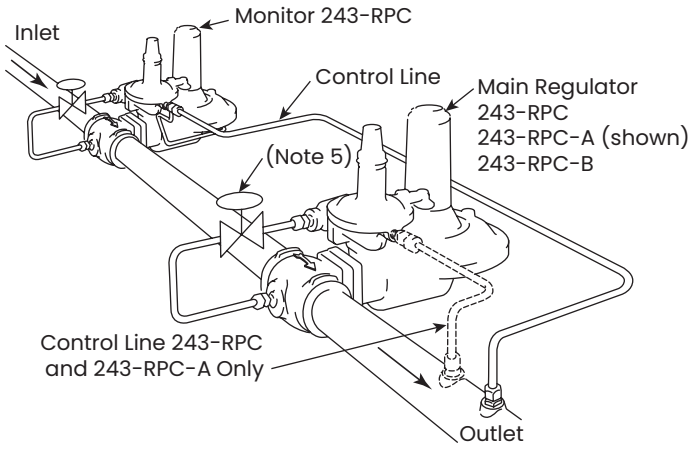
Monitoring is used to guard against a regulator failure causing excessive pressure downstream.

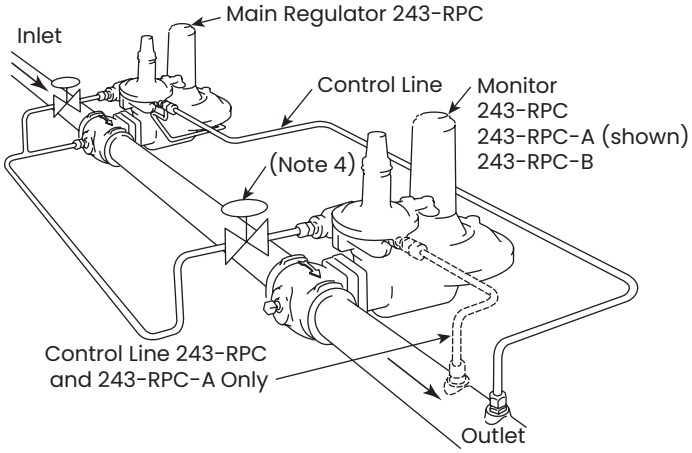
A monitor set consists of two regulators in a series, one of which is a standby. Normally, the main regulator provides controls. The standby (the monitor) is adjusted for a somewhat higher set-point pressure so it is normally open and allows the gas to flow freely. If a failure in the main regulator causes the outlet pressure to rise, the monitor takes over and controls outlet pressure to its somewhat higher set-point.

As illustrated, 243-RPC regulators can be used for monitoring.

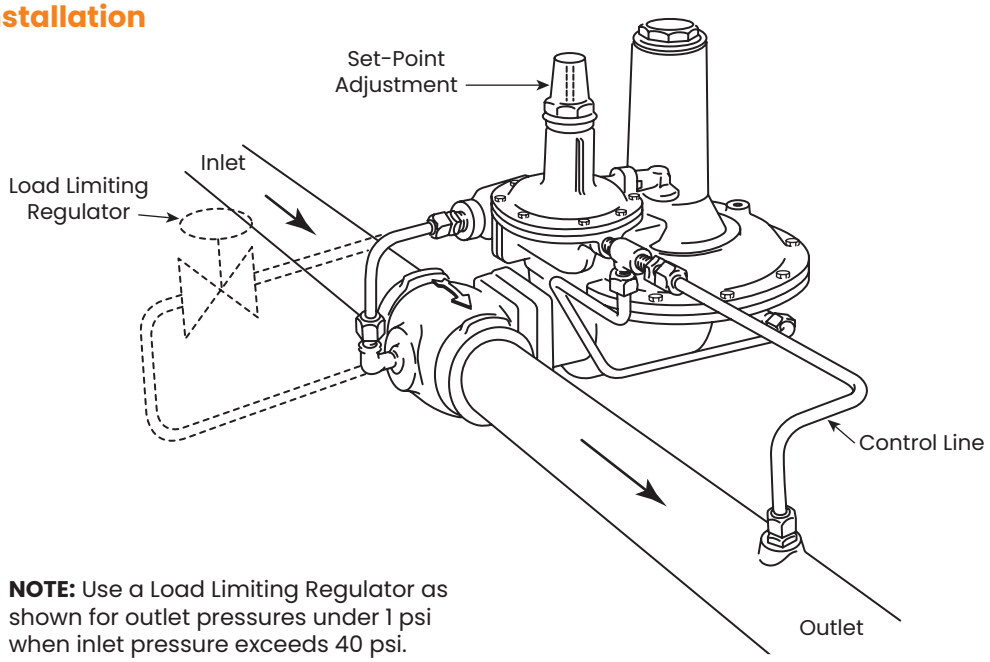
Note the following:

1. Either regulator can be used as the monitor (main regulator upstream and monitor downstream, or monitor upstream and main regulator downstream). Both arrangements have their advantages, which setup is used depends on individual requirements and preferences.
2. The upstream regulator (whether the main regulator or monitor) must have a blocked throat with stem seal and an external control line. Only the standard 243-RPC should be used in the upstream position.
3. The downstream regulator (whether the main regulator or monitor) can be the same as note 2 above or have internal control. Standard 243-RPC, 243-RPC-A, or 243-RPC-B can be used.
4. For the monitor (whether upstream or downstream), a load limiting regulator should be used on the inlet supply to the pilot as illustrated. Adjust the set-point 3 to 4 psi higher than the monitor set-point.
5. For the main regulator, a load limiting regulator is necessary only for outlet pressures below 1 psi where inlet exceeds 40 psi. Adjust the set-point 3 to 4 psi higher than the main regulator set-point.
6. The capacity of the regulators in a monitor set should be calculated by taking 70% of the capacity of the smaller regulator in the monitor set or 70% of either unit if they are the same size.





Typical Installation



NOTE: Use a Load Limiting Regulator as shown for outlet pressures under 1 psi when inlet pressure exceeds 40 psi.

Construction Materials

Component	Materials Used
Body	Cast Iron (ASTM A126 Class B)
Diaphragm Case	Die-Cast Aluminum Alloy
Diaphragms	Buna-N with Nylon Fabric Insert
Diaphragm Pans	Plated Steel
Main Diaphragm Coupling	Zinc Die-Casting
Orifice	Brass
Valve	Viton-A or Buna-N Soft Seat in Aluminum Holder
Stem	Brass
Levers	Plated Stamped Steel
O-rings and Tetraseals	Buna-N
Main Spring Seal Cup	Zinc Die-Casting
Pilot Adjustment Screw	Plated Steel
Pilot Seal Cap	Cast Iron
Pilot Trim	Stainless Steel
Pilot Diaphragm Coupling	Plated Steel
Pilot Load Relief	Plated Steel
Pilot Tubing	Steel
Tubing Fittings	Brass

Metrication

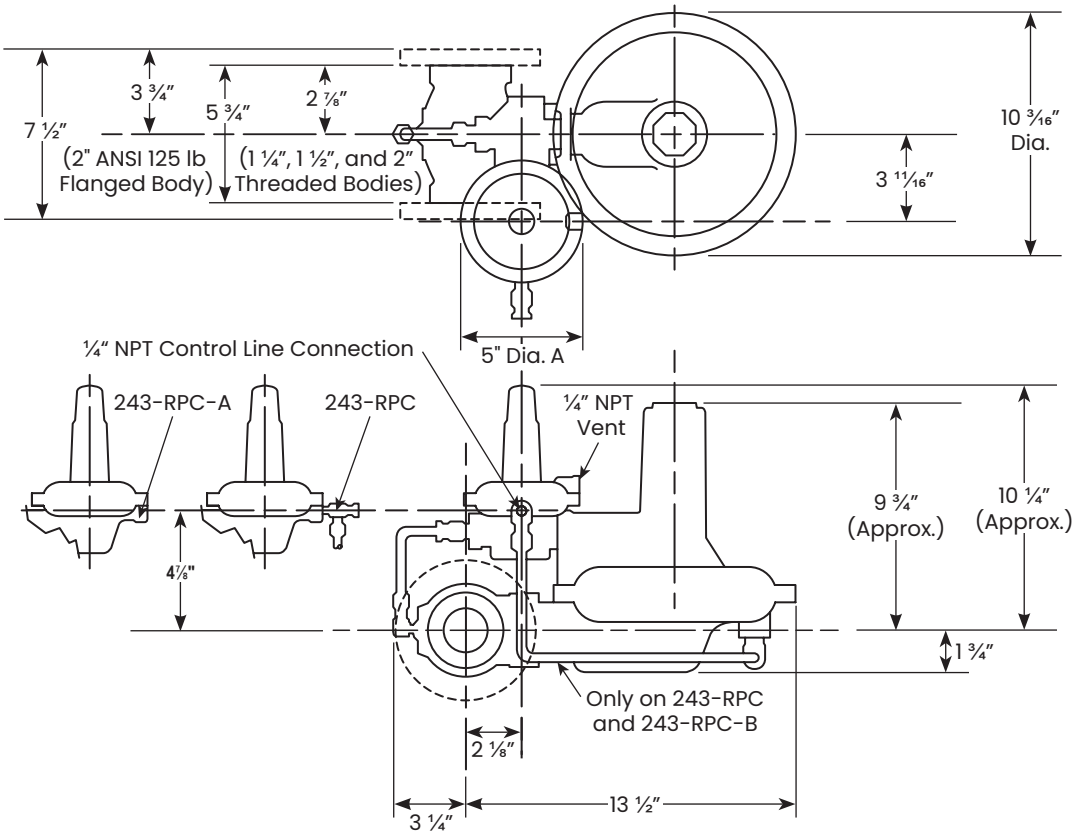
Use the following for metric conversions:

Std. Meters³/hr × 35.31 = ft³/hr (SCFH)
Std. Ft³/hr (SCFH) × 0.0283 = m³/hr
kilograms/centimeter² (kg/cm²) × 14.22 = psi
psi × 0.0703 = kilograms/centimeter² (kg/cm²)
kilo-pascals (kPa) × 0.145 = psi
psi × 6.90 = kilo-pascals (kPa)
bars × 14.50 = psi
psi × 0.69 = bars
millimeters water (mm H_2O) × 0.0394 = in. w.c.
in. w.c. × 25.4 = millimeters water (mm H_2O)
millimeters mercury (mm Hg) × 0.535 = in. w.c.
in. w.c. × 1.868 = millimeters mercury (mm Hg)
in. w.c. × 27.7076 = psi
psi × 0.03609 = in. w.c.

CAUTION

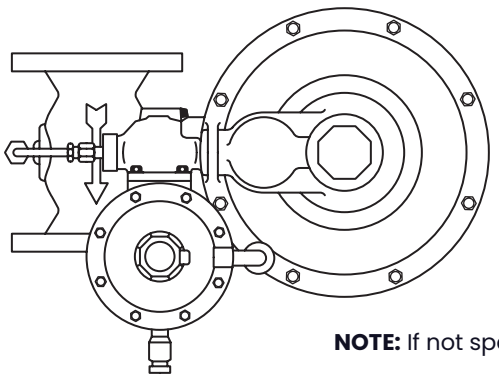
Regulators are pressure control devices with numerous moving parts subject to wear that is independent upon particular operating conditions. To ensure continuous satisfactory operation, a periodic inspection schedule must be adhered to with the frequency of inspection determined by the severity of service and applicable laws and regulations.

Dimensions

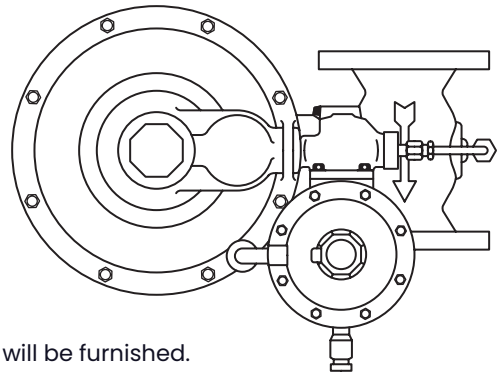


Mounting Positions

Position No. 1



Position No. 2



NOTE: If not specified, Position No. 1 will be furnished.

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