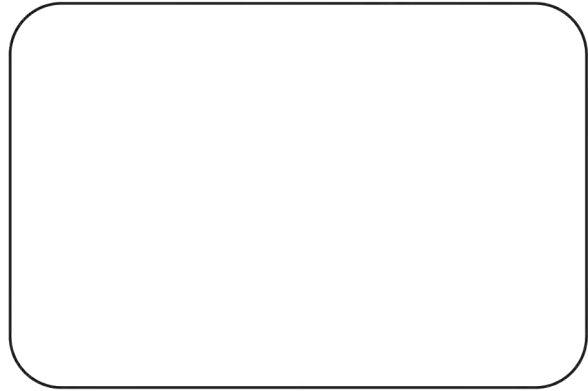




# Gas Essentials<sup>INC</sup>

Natural and Propane Gas Regulation, Measurement and Controls

Distributed By



## Commercial & Industrial Propane Regulators and Meters

Master Distributor for





# First Stage Regulators

P32\* ▶



- ◀ Field adjustable
- ◀ 60 Mesh screen on inlet
- ◀ 1/4" FNPT 250 PSI
- ◀ Excellent stability

P37\* ▶



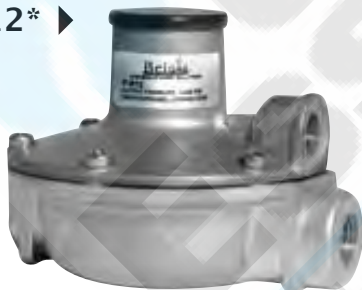
- ◀ Patented balance spindle design eliminates changes on outlet due to inlet fluctuations
- ◀ 1/2" FNPT 250 PSI

### Capacity Chart @ 100 PSI

P32	2 MBTUPH
P37	8 MBTUPH

Outlet spring range: 0 to 30 PSI

P912\* ▶



- ◀ Versatile
- ◀ Control Accuracy
- ◀ Compact Design
- ◀ Removable Vent Screen
- ◀ 1/4" x 3/8" FNPT 250 PSI

### Capacity Chart

10 PSI	25 PSI	50-250 PSI
120,000 BTUPH	220,000 BTUPH	245,000 BTUPH

Based on 11" wc outlet pressure

\* UL Approved



# First Stage Regulators

Maximum inlet pressure 250 PSI ▶

Materials of construction: ▶  
Cast ductile iron body,  
aluminum bonnet  
and diaphragm case,  
nitrile diaphragm and seat

Temperature range -20° to 180° F ▶  
-29° to 82° C

Sizes available: 3/4", 1" & 2" FNPT ▶

Outlet pressure ranges: ▶  
5 to 20 PSI  
15 to 40 PSI

Operator/Monitor versions available ▶  
P627/P627M

Internal Relief version available ▶  
P627R



## ▲ P627

The P627 is a First Stage Regulator used in conjunction with PGS Second Stage Regulators.

# First Stage Regulators



## ▲ P630

The P630 is a First Stage Regulator used in conjunction with PGS Second Stage Regulators.

- ◀ Maximum inlet pressure 250 PSI
- ◀ Materials of construction:  
Cast ductile iron body,  
bonnet and diaphragm case,  
neoprene diaphragm  
and nylon seat
- ◀ Temperature range -20° to 150° F  
-29° to 66° C
- ◀ Sizes available: 1" & 2" FNPT
- ◀ Outlet pressure ranges:  
3 to 10 PSI  
8 to 20 PSI

## P627 – Capacity Chart

### Maximum Flow Of Propane In Million BTUPH

#### Outlet Pressure

Inlet Pressure	Size	10 PSI			20 PSI		
		Orifice			Orifice		
		1/4"	3/8"	1/2"	1/4"	3/8"	1/2"
30 PSI	1"	4.4	7.5	10.8	4.0	6.9	9.9
	2"	4.4	5.8	10.2	3.7	6.8	9.7
60 PSI	1"	7.5	13	21.7	7.5	15.3	23
	2"	7.5	11.5	28.2	7.5	13.3	24.9
100 PSI	1"	11.6	19.8	25.4	11.6	22	37
	2"	11.6	25.7	45.5	11.6	25.7	45.5
150 PSI	1"	16.6	27	28.5	16.6	28	54.2
	2"	16.6	36.9	41.1	16.6	36.9	46
200 PSI	1"	21.7	28.5	29.3	21.7	42.2	62
	2"	21.7	36	38	21.7	38	52.3

**How to order: P627 1" or 2"**

Orifices: A = 1/4" B = 3/8" C = 1/2" Spring ranges: A = 5 to 20 psi B = 15 to 40 psi

## P627R – Capacity Chart

### Maximum Flow Of Propane In Million BTUPH

#### Outlet Pressure

Inlet Pressure	Size	10 PSI			20 PSI		
		Orifice			Orifice		
		1/4"	3/8"	1/2"	1/4"	3/8"	1/2"
30 PSI	1"	3.9	5.6	7.6	4	6.9	9.9
	2"	3.9	5.6	7.6	4	6.9	9.9
60 PSI	1"	5.8	8.9	10.9	7.5	12.3	16.8
	2"	5.8	8.9	10.9	7.5	12.3	16.8
100 PSI	1"	7.6	11.9	12.9	11.6	17.1	21.2
	2"	7.6	11.9	12.9	11.6	17.1	21.2
150 PSI	1"	9	15.8	17.1	16.3	21.4	22.2
	2"	9	15.8	17.1	16.3	21.4	22.2
200 PSI	1"	10	17.4	20.4	16.6	22.2	22.8
	2"	10	17.4	20.4	16.6	22.2	22.8

**How to order: P627R 1" or 2"**

Orifices: A = 1/4" B = 3/8" C = 1/2" Spring ranges: A = 5 to 20 psi B = 15 to 40 psi

# P630LP – Capacity Chart

## Maximum Flow Of Propane In Million BTUPH

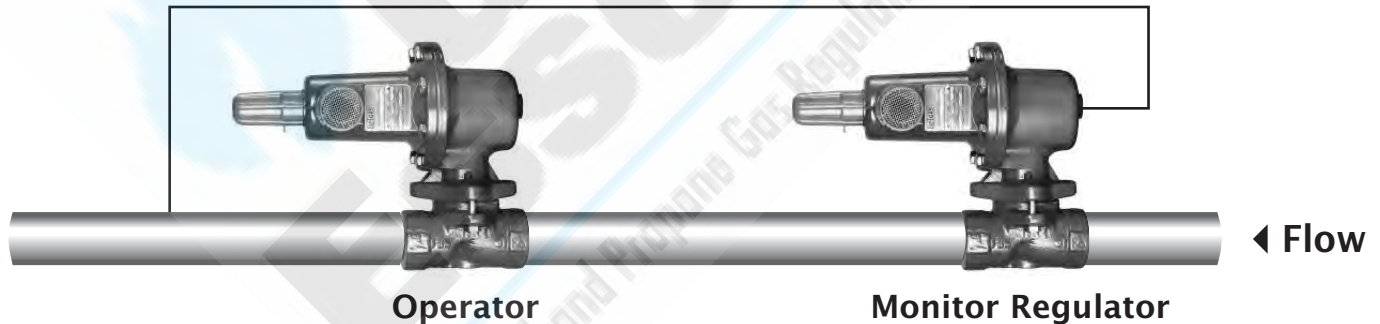
### Outlet Pressure

Inlet Pressure	Size	10 PSI			20 PSI		
		Orifice			Orifice		
		1/4"	3/8"	1/2"	1/4"	3/8"	1/2"
30 PSI	1"	3.3	4.9	6.8	3.9	7.3	10.8
	2"	3.9	7.3	14	4.1	8.2	14.6
60 PSI	1"	5.5	7.4	9.2	7.7	11.9	15.5
	2"	7.1	15.7	29.3	8	17.4	28.5
100 PSI	1"	7.3	9	10.9	11.7	15	17.4
	2"	11.7	27	47.6	12.3	27	46
150 PSI	1"	9	10.7	12.3	14.6	17.4	19
	2"	17.4	39.6	69.8	17.4	36.5	66.6
200 PSI	1"	9.8	11.9	13	15.8	19	20.6
	2"	22.2	50.8	90.4	22.2	50	93.6

**How to order:** P630LP 1" or 2"

Orifices: A = 1/4" B = 3/8" C = 1/2" Spring ranges: A = 3 to 10 psi B = 8 to 20 psi

### Monitor set using two P627 Belgas Regulators



### Principle of Operation

The Operator/Monitor installation is designed to protect against over-pressurization of downstream piping and equipment in the event the normally throttling regulator (Operator) cannot function properly. In any Operator/Monitor installation the Operator will be the regulator with the lower set point and the Monitor will be the regulator with the higher set point. The upstream regulator must always be an "M" version with an o-ring sealed valve stem and a threaded connection on the lower diaphragm case for a downstream sensing line. In the event the Operator cannot function properly, the downstream pressure will rise to the set point of

the Monitor at which time the Monitor will begin throttling at its set point. For example, suppose the Operator has a set-point of 10 PSIG and the Monitor has a set point of 11 PSIG. Since both regulators are attempting to regulate the pressure at the same location (downstream of the second regulator) the Monitor will remain "wide-open" during normal operation because the Operator is limiting the downstream pressure to 10 PSIG. If the Operator fails to control the pressure at 10 PSIG, the downstream pressure will rise to 11 PSIG and the Monitor will begin regulating.

# First Stage Gas Regulators



## Norval/Dival Regulator Main Features

The Norval pressure regulator modular design allows for the application of an optional slam shut over pressurer device for use as an "in line" monitor" on the same body with changing the face to face dimension of the regulator. Monitor/Operator versions are also available.

The Norval "top entry design" allows for periodic maintenance as necessary without removing the valve body from the gas line.

Fast response time makes it ideal for industrial burner and commercial applications whenever sudden changes of flowrate are part of the process.

The Norval regulator maintains high accuracy output against any inlet pressure variation, making it the optimum product for gas district systems.

Easy maintenance and reduced number of parts are the basis of low cost operation.



BelGas P99 Pilot Operated Gas Regulator  
Available Fall 2013



Norval



Dival

- Norval/Dival Regulator Head and Valve Body Assembly Selected by Application with Specification Sheet Included at Time of Quotation
  - Norval/Dival Inlet Pressures to 232 PSI
  - Norval/Dival Outlet Pressures to 63 PSI
  - Capacities to 227 million btu/hr propane
  - Piping: 1" NPT thru 8" Flanged
  - Temperature Range: -4°F to 140°F
- 
- Capacities to 74,000,000 BTU/Hr Propane
  - Suitable for Large Industrial, Boiler and Commercial Applications
  - Inlet Pressure Up to 300 PSI
  - Outlet Pressure Down to 1 PSI



# Second Stage Regulators



## P143 Series

- Valve Body Sizes: 3/4", 1", 1-1/4" NPT
- Vent Size: 1" NPT
- Temperature Range: -20°F to 150°F
- Approximate Weight: 6 lbs.
- 125 PSI Maximum Inlet Pressure



## P200 Series

- Valve Body Size: 2" NPT, 2" 150 RF Flange
- Vent Size: 1" NPT
- Temperature Range: -20°F to 200°F
- Approximate Weight: 26 lbs.
- 125 PSI Maximum Inlet Pressure



## P133 Series

- Valve Body Size: 2" NPT, 2" 125 RF Flange
- Vent Size: 1" NPT
- 3/4" NPT Control Connections
- Temperature Range: -40°F to 200°F
- Approximate Weight: 35 lbs.
- 60 PSI Maximum Inlet Pressure

# P143 Pressure Regulator

## Second Stage

- Versatile
- Control Accuracy
- Compact Design
- Low Pressure Cut-Off Option

The Type P143 pressure regulator is ideal for natural gas, air, propane and general purpose gas pressure regulation. Uses include commercial, residential and light industrial for burners and unit heaters. The P143 has an internal relief device and is available in the low pressure cut off – LPCO – version.

### Applications

Applicable to a wide range of gaseous fluids, including air, natural gas and propane. Can be used as a LP regulator.

### Materials of Construction

	P143
Body, Bonnet	Iron, Aluminum
Diaphragm	Nitrile
Diaphragm Assembly	Zinc/Nitrile
Gaskets	Non-asbestos, CGR 2750
Pin	Stainless Steel
Vent screen	Stainless Steel
Spring	Zinc-Plated Steel
Diaphragm Piston	Zinc-Plated Steel

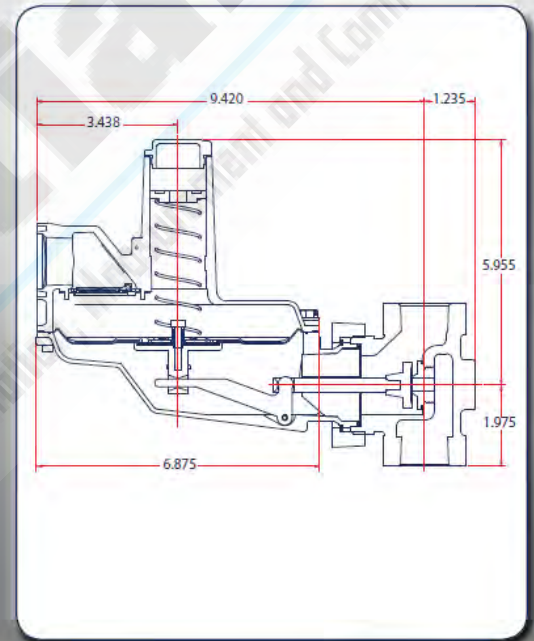
### Max Inlet Pressure (PSIG)

Orifice	LPCO	Standard
1/8		125
3/16		125
1/4	60	60
5/16	40	40
3/8	25	40
7/16	15	–
1/2		20
5/8		10



- Valve Body Sizes: 3/4", 1", 1-1/4" NPT
- Vent Size: 1" NPT
- Temperature Range: -20°F to 150°F
- Approximate Weight: 6 lbs.

P143 Standard Dimensions



### Spring Ranges

3.5"-6.5" WC	Red
5.0"-8.5" WC	Blue
6.0-14" WC	Green
12"-33" WC	Orange
0.5-2.0 PSI	Purple
0.5-3.0 PSI	Yellow
2.0-6.0 PSI	Black

# P143 Pressure Regulator

## Propane Gas Capacities BTU/Hr (1.50 Specific Gravity)

Body Size 3/4" x 3/4"							
Inlet	Orifice						
psig	1/8"	3/16"	1/4"	5/16"	3/8"	1/2"	5/8"
1/2					535,500	708,750	803,250
1				756,000	787,500	803,250	834,750
2			834,750	882,000	897,750	913,500	945,000
3		661,500	945,000	882,000	992,250	1,023,750	1,055,250
5	393,750	882,000	1,102,500	1,134,000	1,149,750	1,212,750	1,244,250
8	488,250	1,102,500	1,323,000	1,354,500	1,386,000	1,417,500	1,417,500
10	582,750	1,307,250	1,496,250	1,527,750	1,575,000	1,606,500	1,606,500
20	834,750	1,890,000	1,921,500	1,953,000	1,968,750	2,000,250	
40	1,354,500	2,472,750	2,094,750	2,110,500	2,283,750		
60	1,890,000	2,614,500	2,394,000				
80	2,362,500	2,693,250					
125	2,835,000	2,992,500					

Body Size 3/4" x 1" • 1" X 1"							
psig	1/8"	3/16"	1/4"	5/16"	3/8"	1/2"	5/8"
1/2					551,250	724,500	819,000
1				756,000	866,250	945,000	1,023,750
2			834,750	1,102,500	1,323,000	1,386,000	1,228,500
3		661,500	1,023,750	1,370,250	1,575,000	1,449,000	1,433,250
5	393,750	913,500	1,401,750	1,764,000	1,827,000	1,496,250	1,527,750
7.5	488,250	1,102,500	1,795,500	2,110,500	2,000,250	1,795,500	1,669,500
10	582,750	1,323,000	2,142,000	2,362,500	2,094,750	1,890,000	1,858,500
20	834,750	1,937,250	3,150,000	2,520,000	2,331,000	2,205,000	
40	1,354,500	2,677,500	3,150,000	2,583,000	2,992,500		
60	1,890,000	2,992,500	3,150,000				
80	2,425,500	3,150,000					
125	3,307,500	3,307,500					

Body Size 1" x 1-1/4" • 1-1/4" x 1-1/4"							
psig	1/8"	3/16"	1/4"	5/16"	3/8"	1/2"	5/8"
1/2					551,250	724,500	819,000
1				756,000	866,250	1,071,000	1,197,000
2			834,750	1,102,500	1,323,000	1,606,500	1,622,250
3		661,500	1,023,750	1,370,250	1,622,250	1,890,000	1,653,750
5	393,750	913,500	1,401,750	1,858,500	2,126,250	2,346,750	1,669,500
7.5	488,250	1,102,500	1,795,500	2,362,500	2,535,750	2,488,500	1,669,500
10	582,750	1,323,000	2,142,000	2,677,500	2,693,250	2,835,000	1,858,500
20	992,250	1,937,250	2,520,000	2,835,000	2,992,500	2,992,500	
40	1,354,500	2,835,000	3,465,000	2,992,500	3,150,000		
60	1,890,000	3,307,500	3,780,000				
80	2,441,250	3,465,000					
125	3,543,750	3,780,000					

# P200 Pressure Regulator

## Features

- Minimize Sudden Downstream Load Change
- Wide Pressure Ranges
- P202 has internal relief valve for overpressure protection

The P200 Series Pressure Regulator is a manual self-operating, spring loaded, adjustable regulator.

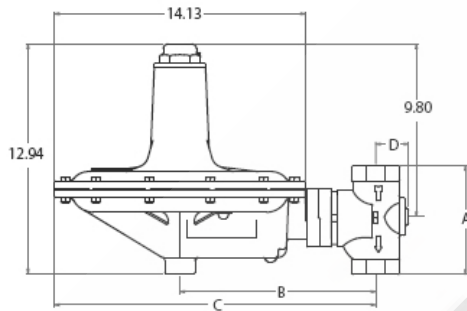
The P200 Series is used in applications where pressure reduction is required.

The P200 will reduce the risk of “shock” from abrupt changes in downstream conditions. This can help prevent safety equipment from shutting an operation down.

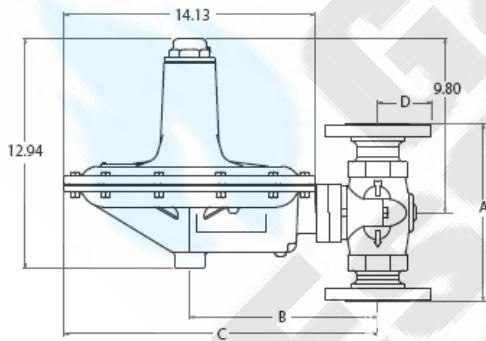


- Valve Body Size: 2” NPT, 2” 150# RF Flange
- Vent Size: 1” NPT
- Temperature Range: -20°F to 200°F
- Approximate Weight: 26 lbs.
- 125 PSI Maximum Inlet Pressure

### P200 Standard



### P200 Flanged



## Dimensions

Body Size	A		B	C	D		
	Inches	NPT			125 FF Flange*	NPT	125 FF Flange*
1.25	6.13		11.03	18.09	1.85		
1.5	6.13		11.03	18.09	1.85		
2	6.13	10	10.59	17.66	2.15	3	3

Maximum Pressures			
Orifice Inches	Versions	Pressure Range "WC or PSIG	Maximum Inlet Pressure PSIG
1/4"			125
3/8"			125
1/4"			100
3/4"			60
1"	O		25
	H		20
	K		30
1-3/16"	O		13
	H	1 - 2 PSIG	14
		1.5 - 3.25 PSIG	14
		2 - 5 PSIG	20
	K	2 - 5.5 PSIG	20
4 - 10 PSIG		25	

Outlet Spring Pressure Ranges				
Model	Spring Ranges		Spring Color	Part Number
	W.C. or PSI	Bar		
P201 and P202	2 - 4.5 W.C.	0.005 - 0.011	Br	655-697-002
	3.5 - 6.5 W.C.	0.009 - 0.016	Red	655-697-003
	5 - 9 W.C.	0.012 - 0.022	Black	655-697-004
	8.5 - 18 W.C.	0.021 - 0.045	White	655-697-005
	14 - 30 W.C.	0.035 - 0.075	Dark Green	655-697-006
P201H and P202H	1 - 2 PSI	0.069 - 0.138	Dark Blue	655-697-007
	1.5 3.25 PSI	0.103 - 0.224	Orange	655-697-008
	2 - 5 PSI	0.138 - 0.345	Yellow	655-697-009
P201K	2 - 5.5 PSI	0.138 - 0.379	Green	655-659-003
	4 - 10 PSI	0.276 - 0.689	Grey	655-697-010

# Capacity Table- P200 Regulator

## Propane Gas Capacities BTU/Hr (1.50 Specific Gravity)

CAPACITIES IN SCFH - 7 " w.c. SET POINT (1" Droop)						
Inlet PSIG	Orifice Size, Inches					
	1/4"	3/8"	1/2"	3/4"	1"	1 3/16"
0.5				2,362,500	2,835,000	3,150,000
1	630,000	1,260,000	1,890,000	3,622,500	4,410,000	5,197,500
1.5	787,500	1,653,750	2,520,000	4,882,500	5,670,000	7,087,500
2	945,000	2,047,500	3,150,000	6,300,000	7,087,500	9,450,000
5	1,575,000	3,307,500	5,512,500	12,127,500	14,805,000	14,805,000
13	2,598,750	5,512,500	10,080,000	15,750,000	31,815,000	33,390,000
25	3,780,000	8,190,000	16,222,500	31,500,000	18,585,000	
60	7,008,750	14,175,000	18,900,000	32,602,500		

CAPACITIES IN SCFH - 14" w.c. SET POINT (2" Droop)						
Inlet PSIG	Orifice Size, Inches					
	1/4"	3/8"	1/2"	3/4"	1"	1 3/16"
1	708,750	1,102,500	1,732,500	2,362,500	2,677,500	4,252,500
1.5	866,250	1,338,750	1,890,000	2,992,500	4,252,500	5,670,000
2	945,000	1,575,000	2,992,500	4,410,000	5,985,000	5,985,000
5	1,653,750	2,756,250	4,410,000	6,300,000	8,347,500	16,695,000
13	2,756,250	5,827,500	8,977,500	22,680,000	28,350,000	29,137,500
25	4,095,000	8,977,500	16,065,000	28,350,000	40,005,000	
60	7,560,000	17,167,500	17,325,000	30,870,000		

CAPACITIES IN SCFH - 2 PSI SET POINT (2% Droop)						
Inlet PSIG	Orifice Size, Inches					
	1/4"	3/8"	1/2"	3/4"	1"	1 3/16"
5	1,575,000	3,386,250	4,331,250	7,875,000	9,765,000	12,442,500
10	2,441,250	4,803,750	7,875,000	13,545,000	20,081,250	21,735,000
15	2,992,500	6,615,000	11,340,000	17,325,000	18,506,250	34,177,500
20	3,622,500	8,032,500	14,490,000	22,365,000	25,200,000	
25	4,095,000	9,292,500	16,852,500	25,830,000	40,005,000	
30	4,725,000	10,395,000	19,057,500	31,027,500	43,942,500	
40	5,827,500	12,915,000	19,215,000	42,840,000		
45	6,457,500	14,175,000	23,940,000	42,840,000		
50	6,930,000	15,277,500	26,617,500	43,155,000		
60	8,032,500	17,797,500	32,760,000	43,155,000		

# Capacity Table- P200 Regulator

(continued)

## Propane Gas Capacities

BTU/Hr (1.50 Specific Gravity)

CAPACITIES IN SCFH - 5 PSI SET POINT (2% Droop)						
Inlet PSIG	Orifice Size, Inches					
	1/4"	3/8"	1/2"	3/4"	1"	1 3/16"
10	1,575,000	2,205,000	2,598,750	4,567,500	5,512,500	7,087,500
15	2,047,500	3,307,500	4,410,000	6,142,500	8,662,500	9,213,750
20	2,598,750	4,331,250	5,670,000	8,347,500	11,655,000	
25	3,228,750	5,355,000	6,930,000	10,710,000	11,655,000	
30	3,780,000	6,300,000	8,662,500	12,442,500	13,151,250	
40	4,882,500	8,505,000	11,340,000	14,647,500		
45	5,118,750	9,607,500	13,072,500	15,513,750		
50	6,063,750	10,552,500	14,805,000	16,773,750		
60	7,008,750	12,915,000	18,112,500	22,916,250		

CAPACITIES IN SCFH - 10 PSI SET POINT (2% Droop)						
Inlet PSIG	Orifice Size, Inches					
	1/4"	3/8"	1/2"	3/4"	1"	1 3/16"
15	708,750	866,250	1,338,750	2,047,500	2,441,250	2,913,750
20	708,750	1,575,000	1,732,500	2,756,250	3,465,000	3,780,000
25	866,250	1,968,750	2,520,000	3,622,500	4,252,500	5,591,250
30	1,260,000	2,126,250	2,835,000	4,410,000	4,410,000	
40	1,653,750	2,598,750	3,386,250	5,512,500		
45	2,126,250	2,992,500	4,095,000	5,827,500		
50	2,283,750	3,307,500	4,488,750	6,772,500		
60	2,520,000	3,622,500	4,882,500	6,930,000		

# P133 Pressure Regulator

## Applications

The P133 is a direct operated pressure reducing regulator used in commercial and industrial applications such as furnaces and burners where accuracy and sensitivity is critical.

The P133 regulator utilizes a balanced diaphragm design that provides for sensitivity and accuracy.

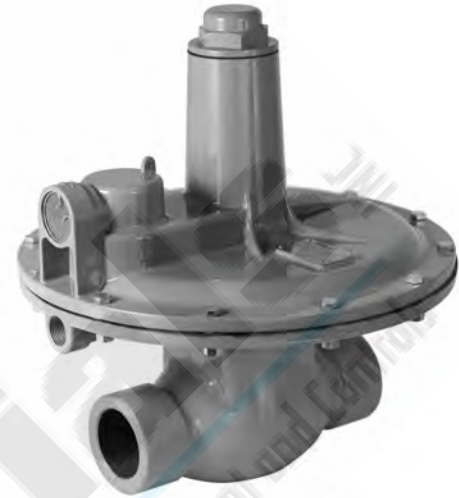
The P133 is available in a low pressure or high pressure model and a broad range of outlet spring ranges. The P133 is also suitable in pressure monitoring applications.

## Specifications

	133L	133H
Maximum Operating Inlet	60 PSIG	60 PSIG
Maximum Emergency Inlet	125 PSIG	125 PSIG
Maximum Operating Outlet	2 PSIG	10 PSIG
Maximum Emergency Outlet	15 PSIG	15 PSIG
Maximum Over Outlet Pressure	3 PSIG	3 PSIG
Pressure Ranges	See Table 2	
Port Sizes	2 NPT	
Restrictor Collars	25%	
	40%	
	60%	
End Connections	2" NPT (Standard) 125 FF Flange (Iron Only)	
Temperature Range	-40°F to 200°F -40°C to 93°C	
Approximate Weight	35 lbs. (15.9 kg)	

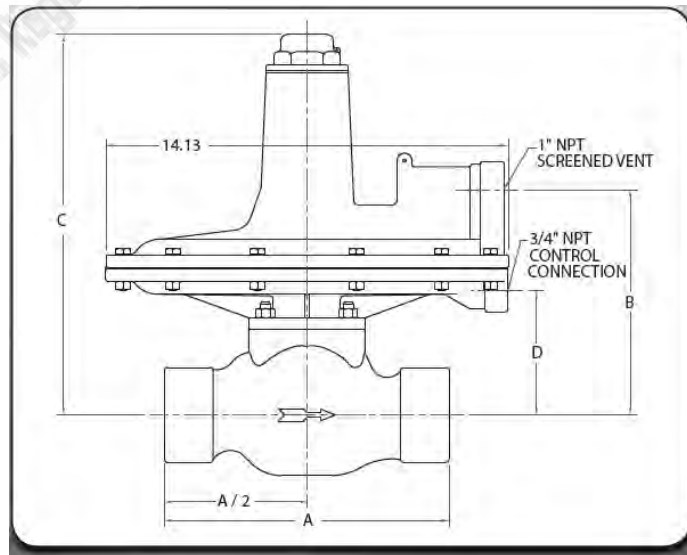
### Outlet Spring Ranges

Model	Spring Ranges W.C. or PSI	Spring Color	Part Number
P133 L & H	2" - 4" W.C.	Brown	655-697-002
	3.5" - 6" W.C.	Red	655-697-003
	5" - 9" W.C.	Black	655-697-004
	8.5" - 18" W.C.	White	655-697-005
	14" - 28" W.C.	Green	655-697-006
	0.75 - 2 PSI	Dark Blue	655-697-007
P133 H Version Only	1.5 - 3.25 PSI	Orange	655-697-008
	2 - 5 PSI	Yellow	655-730-000
	5 - 10 PSI	Blue Stripe	655-659-004



## P133 Dimensions

A			B	C	D		
2" NPT	12.5FF	150RF			2" NPT	12.5FF	150RF
10.0	10.0	10.0	7.91	13.36	4.36	4.36	4.36



# Capacity Table - P133 Regulator

## Propane Gas Capacities BTU/Hr (1.50 Specific Gravity)

P133L Unrestricted Flow Capacities in Millions of BTU Propane

Outlet Pressure Setting and Outlet Pressure Range												
Inlet Pressure	4" wc 2 - 4" wc	6" wc 3.5 - 6" wc	7" wc 5 - 9" wc	14" wc 8.5 - 18" wc		14" wc 14 - 28" wc		1 psig 14 - 28" wc		2 psig 0.75 - 2 psig		
	1" wc Droop SCFH	1" wc Droop SCFH	1" wc Droop SCFH	1" wc Droop SCFH	2" wc Droop SCFH	1" wc Droop SCFH	2" wc Droop SCFH	10% Droop SCFH	20% Droop SCFH	10% Droop SCFH	20% Droop SCFH	
1	22	20	18	7	13							
2	32	31	26	12	23			18	25			
3	40	38	33	18	30			24	33	19	29	
5	55	51	50	25	44	22	36	37	49	32	44	
10	81	81	75	53	70	40	59	59	69	59	72	
20	122	121	124	108	119	94	108	110	121	97	119	
30	159	157	157	143	152	137	146	141	159	137	159	
40	195	192	195	171	182	168	181	173	192	165	190	
50	229	226	228	204	214	207	215	200	228	195	228	
60	267	264	261	244	253	239	248	234	263	228	267	

P133H Unrestricted Flow Capacities in Millions of BTU Propane

Outlet Pressure Setting and Outlet Pressure Range											
Inlet Pressure	3 psig 1.5 - 3 psig		2 psig 2 - 5 psig		5 psig 2 - 5 psig		5 psig 5 - 10 psig		10 psig 5 - 10 psig		
	10% Droop SCFH	20% Droop SCFH	10% Droop SCFH	20% Droop SCFH	10% Droop SCFH	20% Droop SCFH	10% Droop SCFH	20% Droop SCFH	10% Droop SCFH	20% Droop SCFH	
3			10	18							
5	22	34	17	28							
7	33	48	20	34	24	37	14	23			
10	44	66	23	42	37	55	22	34			
15	63	89	40	61	55	80	29	49	33	55	
20	81	113	55	81	72	105	37	64	48	80	
30	119	151	77	114	107	149	55	91	69	116	
40	154	187	103	152	138	184	69	114	88	152	
50	185	222	132	176	162	217	89	140	116	184	
60	214	259	163	207	192	245	102	166	143	214	





# Governor Series Regulators

## Second Stage Regulators



Single Model  
Inlet Pressure Range: 3" W.C. to 2 PSI



Over Pressure Device (OPD) Model  
Inlet Pressure Range: 3" W.C. to 2 PSI

### Introduction

The GOVERNOR line of gas regulators are designed to comply with the latest CSA and international standards for regulators suitable for indoor and outdoor installations with no modifications.

The GOVERNOR family of regulators are ideal for a wide range of residential through large industrial applications. The materials and soft parts used in the construction of the GOVERNOR regulators make them suitable for use with natural gas, LPG, Propane air and other non-corrosive gases.

All GOVERNOR regulators are equipped with balanced valve design for improved high outlet pressure accuracy regardless of Inlet pressure variation. The double diaphragm with integral vent limiter provides added security.

The external vent limiter reduces piping costs and the need for costly vent piping for indoor installations and complies with CSA guidelines.\* The number of high capacities and regulator options sometimes eliminates the need for separate

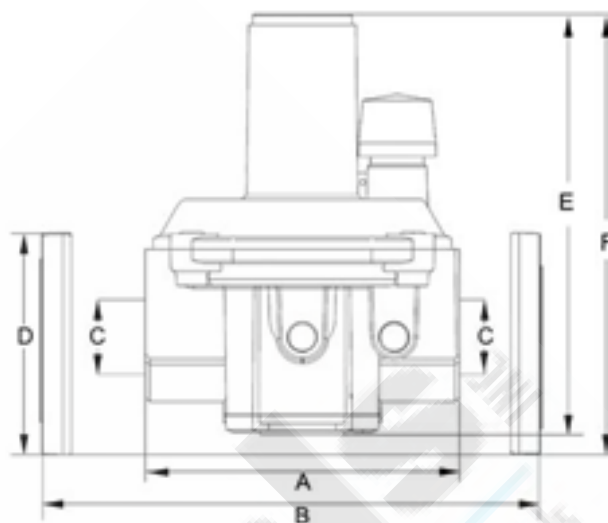
### Safe, Reliable and High Performance

- **Internal vent limiter: non removable, for indoor and outdoor installations**
- **External vent limiter option for indoor installations.**
- **Double diaphragm for added safety and greater reliability of service**
- **Balanced valve design allows increased capacity, high 500:1 turndown and stable regulation from low to high flow.**
- **Complete lockup in absence of gas flow, bubble tight shutoff.**

\*As Approved by Local Codes and Standards

# Governor Series Regulators

## Second Stage Regulators



### Main Features

- CSA 6.22a-2005 ANSI Z21.80A2005 Class I for outlet pressures up to 14" W.C. Certified
- Integral Vent Limiter
- External Vent Limiter — no vent line required\*
- Positive dead-end lockup
- Inlet and Outlet test ports
- 500 to 1 Turndown
- Minimum  $\Delta P$  - 1" W.C.

### Specifications

- Suitable for use with Natural Gas, LPG, and other non corrosive, clean gas
- Inlet Pressure: 3" W.C. to 2 PSIG
- Max. Inlet 7.25 PSIG for non-CSA applications
- Outlet pressure: 2" W.C. to 14" W.C. and up to 4.25 PSIG for non-CSA applications
- Temperature range: -40°F to 150°F
- Connections: 1/2" thru 4"
- Maximum Emergency Inlet Exposure Pressure: 80 PSIG
- Suitable for Indoor or Outdoor Installation

\*As Approved by Local Codes and Standards

DIMENSIONS (IN INCHES)

Model #	Size	A	B	C	D	E	F	Weight (Lbs)
F30051	1/2" NPT	4.12	-	1/2	-	5.59	-	1.54
F30052	3/4" NPT	4	-	3/4	-	5.59	-	1.54
F30053	1" NPT	4	-	1	-	5.59	-	1.54
F30150	1/2" NPT	5.43	-	1/2	-	6.89	-	2.75
F30151	3/4" NPT	5.28	-	3/4	-	6.89	-	2.75
F30152	1" NPT	5.28	-	1	-	6.89	-	2.75
F30153	1-1/4" NPT	7.64	-	1-1/4	-	10	-	7.5
F30154	1-1/2" NPT	7.64	-	1-1/2	-	10	-	7.5
F30155	2" NPT	9.29	-	2	-	12.44	13.74	12.34
F30157/F	3" FL	-	16.9	3	ANSI 150	-	17.09	27.56
F30158/F	4" FL	-	16.9	4	ANSI 150	-	19.8	27.56



## Propane Gas Capacities

BTU/Hr (1.50 Specific Gravity)

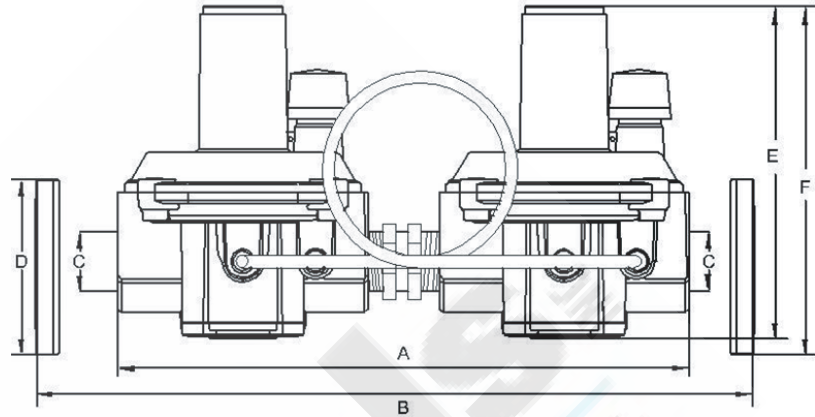
Model	Set Point	Operating Inlet Pressure		
		14" W.C.	1 PSI	2 PSI
<b>F30051</b> ½"	8" W.C.	608,000	1,000,100	1,462,000
	11" W.C.	468,000	989,000	1,462,000
<b>F30052</b> ¾"	8" W.C.	608,000	1,336,000	1,819,000
	11" W.C.	468,000	1,225,000	1,819,000
<b>F30053</b> 1"	8" W.C.	608,000	1,668,000	2,364,000
	11" W.C.	468,000	1,534,000	2,364,000
<b>F30150</b> ½" High Capacity	8" W.C.	1,403,000	2,670,000	3,473,000
	11" W.C.	1,033,000	2,317,000	3,473,000
<b>F30151</b> ¾" High Capacity	8" W.C.	1,772,000	3,282,000	4,386,000
	11" W.C.	1,306,000	2,926,000	4,386,000
<b>F30152</b> 1" High Capacity	8" W.C.	2,106,000	3,838,000	5,210,000
	11" W.C.	1,551,000	3,474,000	5,210,000
<b>30153</b> 1¼"	8" W.C.	5,023,000	8,343,000	12,428,000
	11" W.C.	3,700,000	8,300,000	12,428,000
<b>30154</b> 1½"	8" W.C.	5,245,000	8,900,000	12,978,000
	11" W.C.	3,863,000	8,656,000	12,978,000
<b>30155</b> 2"	8" W.C.	9,603,000	17,242,000	23,762,000
	11" W.C.	7,073,000	15,851,000	23,762,000
<b>30157/F</b> 3"	8" W.C.	15,240,000	26,476,000	36,543,000
	11" W.C.	11,735,000	24,751,000	36,543,000
<b>30158/F</b> 4"	8" W.C.	26,698,000	46,387,000	63,964,000
	11" W.C.	20,579,000	43,383,000	63,964,000

Standard Outlet Spring Range	
<b>Green</b>	2.0" w.c. to 5.1" w.c.*
<b>Red</b>	2.7" w.c. to 7.9" w.c.*
<b>White</b>	4.0" w.c. to 11.8" w.c.*
<b>Black</b>	6.0" w.c. to 14" w.c.*
<b>Yellow</b>	9.8" w.c. to 27.5" w.c.
<b>Violet</b>	23.6" w.c. to 59" w.c. (0.85 to 2.13 PSI)
<b>Orange</b>	55" w.c. to 118" w.c. (2 to 4.26 PSIG)
* CSA outlet pressure certified	

# Governor OPD\* Regulators

Second Stage Regulators

\*(Over Pressure Device)



## Main Features

- CSA Certified to ANSI Z21.80A2005
- CSA Certified 6.22a-2005 Class I for outlet pressures up to 14" W.C. and inlet pressures up to 5 PSIG
- CSA Certified 6.22a-2005 Class II for outlet pressures up to 1 PSIG and inlet pressures up to 5 PSIG
- Integral Vent Limiter
- External Vent Limiter - no vent line required\*
- Positive dead-end lockup
- Inlet and Outlet test ports
- 500:1 Turndown

## Specifications

- Suitable for use with Natural Gas, LPG, and other non-corrosive clean gas
  - Inlet Pressure: 7" W.C. to 5 PSIG
  - Max. Inlet 7.25 PSIG for non-CSA applications
  - Temperature range: -40°F to 150°F
  - Connections: 1/2" thru 2"
  - Maximum Emergency Inlet Exposure Pressure 80 PSIG
  - Suitable for Indoor or Outdoor Installation
- \*As Approved by Local Codes and Standards

DIMENSIONS (IN INCHES)

Model #	Size	A	B	C	D	E	F	Weight (Lbs)
F30051DC	1/2" NPT	8.86	-	1/2	-	5.59	-	3.25
F30052DC	3/4" NPT	8.86	-	3/4	-	5.59	-	3.25
F30053DC	1" NPT	8.86	-	1	-	5.59	-	3.25
F30150DC	1/2" NPT	11.22	-	1/2	-	6.89	-	5.75
F30151DC	3/4" NPT	11.22	-	3/4	-	6.89	-	5.75
F30152DC	1" NPT	11.22	-	1	-	6.89	-	5.75
F30153DC	1-1/4" NPT	16.61	-	1-1/4	-	10	-	15.5
F30154DC	1-1/2" NPT	16.61	-	1-1/2	-	10	-	15.5
F30155DC	2" NPT	19.88	-	2	-	12.44	13.74	25
F31157F	3" FL	-	33.93	3	ANSI 150	-	17.09	56
F31158F	4" FL	-	33.93	4	ANSI 150	-	19.8	56

# Propane Gas Capacities

BTU's per Hour( 1.50 Specific Gravity)



Model	Set Point	Operating Inlet Pressure		
		1 PSI	2 PSI	5 PSI
F30051DC ½"	8" W.C.	1,000,125	1,461,600	1,461,600
	11" W.C.	989,100	1,461,600	1,461,600
	14" W.C.	878,850	1,461,600	1,461,600
F30052DC ¾"	8" W.C.	1,335,600	1,756,125	1,756,125
	11" W.C.	1,225,350	1,756,125	1,756,125
	14" W.C.	1,099,350	1,756,125	1,756,125
F30053DC 1"	8" W.C.	1,667,925	2,364,075	2,364,075
	11" W.C.	1,534,050	2,364,075	2,364,075
	14" W.C.	1,426,950	2,364,075	2,364,075
F30150DC ½" High Capacity	8" W.C.	2,669,625	3,472,875	3,472,875
	11" W.C.	2,316,825	3,472,875	3,472,875
	14" W.C.	2,086,875	3,472,875	3,472,875
F30151 ¾" High Capacity	8" W.C.	3,282,300	4,386,375	4,386,375
	11" W.C.	2,926,350	4,386,375	4,386,375
	14" W.C.	2,636,550	4,386,375	4,386,375
F30152DC 1" High Capacity	8" W.C.	3,838,275	5,210,100	5,210,100
	11" W.C.	3,474,450	5,210,100	5,210,100
	14" W.C.	3,131,100	5,210,100	5,210,100
F30153DC 1¼"	8" W.C.	8,342,775	12,428,325	12,428,325
	11" W.C.	8,290,800	12,428,325	12,428,325
	14" W.C.	7,470,225	12,428,325	12,428,325
F30154DC 1½"	8" W.C.	8,898,750	12,978,000	12,978,000
	11" W.C.	8,656,200	12,978,000	12,978,000
	14" W.C.	7,799,400	12,978,000	12,978,000
F30155DC 2"	8" W.C.	31,416,525	23,762,025	23,762,025
	11" W.C.	15,850,800	23,762,025	23,762,025
	14" W.C.	14,282,100	23,762,025	23,762,025
F31157F 3"	8" W.C.	26,475,750	36,543,150	36,543,150
	11" W.C.	24,751,125	36,543,150	36,543,150
	14" W.C.	21,684,600	36,543,150	36,543,150
F31158F 4"	8" W.C.	46,386,900	63,963,900	63,963,900
	11" w.c.	43,383,375	63,963,900	63,963,900
	14" W.C.	37,948,050	63,963,900	63,963,900

## Standard Outlet Spring Range

<b>Green</b>	<b>2.0" w.c. to 5.1" w.c.*</b>
<b>Red</b>	<b>2.7" w.c. to 7.9" w.c.*</b>
<b>White</b>	<b>4.0" w.c. to 11.8" w.c.*</b>
<b>Black</b>	<b>6.0" w.c. to 14" w.c.*</b>
<b>Yellow</b>	<b>9.8" w.c. to 27.5" w.c.</b>
<b>Violet</b>	<b>23.6" w.c. to 59" w.c.</b> <b>(0.85 to 2.13 PSI)</b>
<b>Orange</b>	<b>55" w.c. to 118" w.c.</b> <b>(2 to 4.26 PSIG)</b>
<b>* CSA outlet pressure certified</b>	

# Relief Valves

**Size Ranges:** ▶  
1" and 2" FNPT

**Throttling type relief** ▶

**High flow rates** ▶

**Compact** ▶

**Reliability due to simplicity** ▶

**Tight shut off** ▶

**Maximum Inlet Pressure:** ▶

1" 100 PSI

2" 25 PSI

**Temperature Range:** ▶

-20 to 150F

**Spring Ranges:** ▶

for 1"

1 to 4.5 PSI

4 to 15 PSI

10 to 20 PSI

15 to 50 PSI

for 2"

.5 to 2.5 PSI

1.75 to 7 PSI

4 to 10 PSI

**Weight:** ▶

1" - 2 LBS

2" - 15 LBS

**How to order:**

289.1 or .2 plus spring range



**Capacity Chart**

1"	2 PSI	23 MBTUPH
	5 PSI	24 MBTUPH
	10 PSI	40 MBTUPH
	20 PSI	66 MBTUPH
2"	1 PSI	28 MBTUPH
	2 PSI	41 MBTUPH
	5 PSI	50 MBTUPH
	10 PSI	50 MBTUPH



# Vapor Meters



250/275 TC ▲

- ◀ Standard 5 PSI MAOP  
option HP version for 10 PSI
- ◀ Direct read, temperature compensated standard
- ◀ Available with 3/4" or 1 " MNPT swivels  
or 3/4" 90 MNPT swivels



400 TC ▲

- ◀ Standard 10 PSI MAOP  
option HP version for 25 PSI
- ◀ Direct read, temperature compensated standard
- ◀ Available with 1 1/4" and  
1 1/2" MNPT swivels

# Capacity Chart

## Maximum Flow Of Propane In Million BTUPH

Inlet Pressure	250 TC	250 TCHP	400 ATC	400 ATCHP
11" WC	630,000		1,000,000	
2 PSI	1,600,000		2,300,000	
5 PSI	1,800,000		2,600,000	
10 PSI		2,300,000	3,000,000	
20 PSI				4,000,000

For higher capacities contact your Gas Essentilas sales representative.  
For pressure correction factor to compensate for pressure over 11" w.c. use chart below.

Pressure	Multiply
2 PSI	× 1.113
5 PSI	× 1.317
10 PSI	× 1.656
20 PSI	× 2.335

Meter index reading in SCFH.  
To convert SCFH to gallons per hour LP,  
divide meter reading by 36.39





# Gas Essentials™

Natural and Propane Gas Regulation, Measurement and Controls

# General Information

## Information about LP-Gas\*

	Propane	Butane
Formula	C <sub>3</sub> H <sub>8</sub>	C <sub>4</sub> H <sub>10</sub>
Boiling Point, °F.	-44	15
Specific Gravity of Gas (Air = 1.00)	1.50	2.01
Specific Gravity of Liquid (Water = 1.00)	0.504	0.582
Lbs. per Gallon of Liquid at 60° F.	4.20	4.81
BTU per Gallon of Gas at 60° F.	91502	102032
BTU per Lb. of Gas	21548	21221
BTU per Cu. Ft. of Gas at 60° F.	2488	3280
Cu. Ft. of Vapor (at 60° F) Gal.	36.38	31.26
Cu. Ft. of Vapor (at 60° F) Lb.	8.66	6.51
Latent Heat of Vaporization at Boiling Point BTU/Gal.	773	808
Combustion Data: Cu. Ft. Air Required to Burn 1 Cu. Ft. Gas	23.86	31.02
Flash Point, °F.	-156	N.A.
Ignition Temperature in Air, °F.	920-1120	900-1000
Maximum Flame Temperature in Air, °F.	3595	3615
Limits of Flammability Percentage of Gas in Air Mixture; at Lower Limit - % at Upper Limit - %	2.15 9.6	1.55 8.6
Octane Number (ISO - Octane = 100)	Over 100	92

\* Commercial quality. Figures shown in this chart represent average values.

## Vapor Pressures of LP-Gases\*

Temperature		Approximate Pressure (PSIG)	
(°F.)	(°C.)	Propane	Butane
-40	-40	3.6	
-30	-34	8	
-20	-29	13.5	
-10	-23	23.3	
0	-18	28	
10	-12	37	
20	-7	47-1	
30	-1	58	
40	4	72	3.0
50	10	86	6.9
60	16	102	12
70	21	127	17
80	27	140	23
90	32	165	29
100	38	196	36
110	43	220	45

\* Conversion Formula: Degrees C. = (°F. - 32) x 5/9 • Degrees F. = 9/5 x °C. + 32

# Comparison Chart

Itron	BelGas	Fisher
B42R/PGS6	<b>P143</b>	HSRL
B31R/PGS8	<b>P143</b>	S102
B34SR/PGS10	<b>P202</b>	S202
B34R/PGS12	<b>P202</b>	S202
B38R/PGS24	<b>P202 or P133</b>	
	<b>P912</b>	912
	<b>P32</b>	67C
	<b>P37</b>	64
	<b>P627</b>	627
	<b>R627</b>	627R
	<b>P630</b>	630
PGP12	<b>P99</b>	299/99
PGD1/2	<b>P133/P99</b>	133L/H
PGD11/22/33	<b>P99/Dival</b>	1098-EGR
	<b>P289</b>	289

**\* Note – This is a guide only**

## Notes



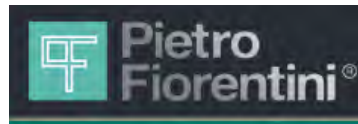
# Gas Essentials™

Natural and Propane Gas Regulation, Measurement and Controls





Natural and Propane Gas Regulation, Measurement and Controls



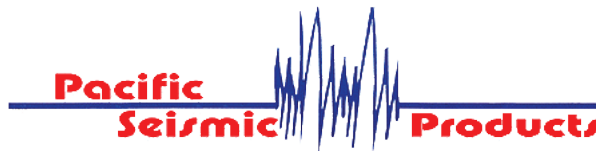
CSA 6.22a -2005 and ANSI Z21.80a Approved  
Ventless Indoor Applications



Regulators for Natural & Propane Gas  
High Pressure Regulators up to 5000 PSI  
Filter Regulators & Gauges

## MILLIKEN

Lubricated two way & three way Plug Valves  
CSA/CGA Approved



Seismic "Earthquake" Valves  
available from 3/4" to 8"

## METERS

Diaphragm, Rotary, Turbine,  
Flange Kits and Accessories

Manufacturer standard warranty applies. For a copy please contact us.