

**AMERICAN
METER COMPANY**

1213B2 Service Regulators

Maximum Inlet Pressure 125 PSIG



AMC Quality System
QMI is Accredited by:



ISO 9001 Certified
Certificate #006697



Dutch Council
for Accreditation



**AMERICAN
METER COMPANY**
Measurement Engineers Since 1836

1213B2 Service Regulators

General Information

The American Meter Series 1213B2 pressure regulator is designed for natural gas applications and features a compact, lightweight design for fast, easy installation. Interchangeable orifices and springs provide a wide range of outlet pressures and flow rates. Outlet pressures between 3.5" W.C. and 5 PSIG are available. Operating temperature range is -20° F to 150° F (-30° C to 65° C). Maximum flow rate is 2500 SCFH (70.8 m³/h).

The diaphragm case may be easily removed for routine inspection without disturbing the line connections. All models conform to ANSI Code B109.4-1998, and CGA Service-type Regulator Specification CAN/CGA-6.18-M95.

Exclusive, 7 - Step Corrosion Protection

The protective finish on the 1213B2 regulator resists corrosive effects of weather and harsh environments better than any other in the industry. Each precision die cast aluminum regulator is treated-inside and out-with a special conversion coating that's part of an exclusive, 7-step finishing process. This coating greatly inhibits oxidation of the metal's surface that can eventually compromise the integrity of the metal. It also prevents finish paint from cracking and blistering. A single coat polyester primer and the high solid polyurethane top coat provides a long-lasting protection to all exterior regulator surfaces. The American Meter conversion coating process meets all environmental protection regulations.

High Tensile Strength Valve Bodies

Each 1213B2 regulator is equipped with a high tensile strength cast iron valve body that rotates in 90-degree increments and features extra heavy wall thickness. This provides maximum strength to withstand installation stresses without damage and prevents thread galling experienced with aluminum.

1213B2 regulator valve bodies are treated with a 5-step metal finishing process. The treated metal is painted with a single coat polyester paint.

Available valve body sizes are: 3/4" x 3/4", 3/4" x 1" and 1" x 1" NPT or BSP-TR for 180° valve bodies. Also available is a 90° valve body in 3/4" x 3/4", 3/4" x 1", 1" x 1" and 1/2" x 1" NPT and 3/4" x 3/4" BSP-TR.

Features

In response to a market survey, the following features were designed into the 1213B2 regulator to accommodate the customers needs.

- Improved relief performance.
- Improved performance repeatability.
- Lever design provides for secondary emergency relief in the event of unauthorized removal of the seal plug.
- Snap-in internal components (quick change outs).
- Non-adjustable relief.
- Larger seat disc area.
- 1213B and 1213B2 use the same seal plug to avoid loss of emergency relief should the seal plugs be interchanged.

Application

The 1213B2 features a full capacity internal relief valve with large passages to assure the fast release of gas (See performance graphs on page 5). For added protection, a secondary relief valve stop is provided to assure operation under the most severe conditions and in the event the seal plug has been removed. The standard relief spring setting is 8.0" W.C. above the normal 7" W.C. outlet pressure.

Valve body configuration permits the 1213B2 regulator to be supplied in four positions as specified on page 7. All 1213B2 regulators are available with either right angle (90-degree) or straight flow (180-degree) valve bodies. Vents can also be supplied in four different positions.

The 1213B2 regulator is designed with an extra large, removable weather and bug-proof stainless steel screened vent to resist freeze-ups and to exclude foreign matter. The vent is threaded 3/4 inch NPT making it suitable for indoor installations.



① AC250 Aluminumcase Meter; ② 1213B2 Regulator;

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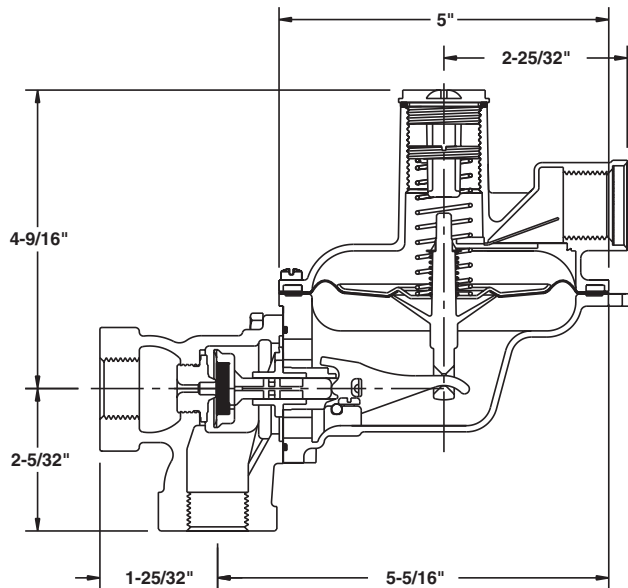
Options

Meter Bar- The 1213B2 regulator can be used with a detachable meter bar 3/4" x 3/4" (Part number 72476G001), 3/4" x 1" (Part number 72476G003) and 1" x 1" (Part number 72476G004) for compact and convenient installation to meters with 6" connection centers. Use of a meter bar prevents piping stress from being transferred to the gas meter.

Vent Elbow- The regulator vent opening should face downward (6 o'clock) **to minimize the chance of blockage from ice and snow.** If not, a 3/4" NPT plastic, 90° vent elbow (Part number 78041P025) and separate protective screen (Part number 70400P017) may be screwed into the vent to provide the necessary protection.

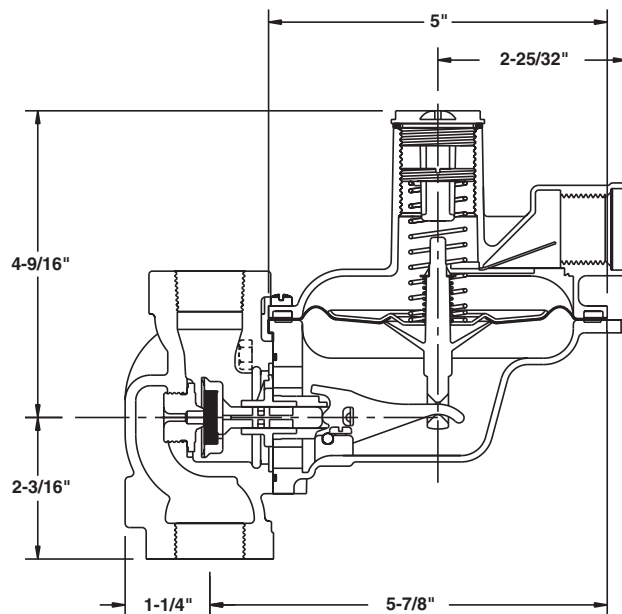
Elevation Compensation- E.C. orifices are also available, which provide constant outlet pressure even when inlet pressure fluctuates greatly. The elevation compensation orifice is a device which reduces changes in regulator outlet pressure due to change in inlet pressure.

The E.C. orifice is recommended for installations where the inlet pressure may vary over a wide range. The E.C. orifice is available in two sizes: 1/8" x 3/16" (Part number 73698G006) and 3/16" (Part number 73698G005). Its capacity is the same as a standard orifice of the same size. Consult your American Meter Sales Representative for specific applications.



Model 1213B2-90°

Model 1213B2-180°



1213B2 Service Regulators

1213B2 Regulator Capacity Performance

Capacity 3/4" Outlet 1213B2 Regulator Set Point 7.0" W.C. @ 50 SCFH

SCFH 0.60 specific gravity gas @ 60° F & 14.7 PSIA. Pressure spring 70017P084. Outlet pressure variance not to exceed +2" -1" W.C. from set point, horizontal position.

Inlet (PSIG)	Orifice Size			
	1/8	3/16	1/4	5/16
1		175	225	225
2		225	400	375
3	175	275	450	500
5	200	350	650	700
10	300	600	950	1100
15	325	800	1100	1400
25	475	1100	1400	1800
35	600	1400	2200	2500
50	700	1800	2200	
60	700	2100	2200	
75	750	2200		
100	1100	2200		
125	1100			

For optimum performance, maximum inlet pressure should not exceed maximum capacity rating for any given orifice size.

Capacity 1" Outlet 1213B2 Regulator Set Point 7.0" W.C. @ 50 SCFH

SCFH 0.60 specific gravity gas @ 60° F & 14.7 PSIA. Pressure spring 70017P084. Outlet pressure variance not to exceed +2" -1" W.C. from set point, horizontal position.

Inlet (PSIG)	Orifice Size			
	1/8	3/16	1/4	5/16
1		175	225	225
2		225	400	375
3	175	275	475	500
5	200	350	650	750
10	300	600	1000	1200
15	350	800	1400	1600
25	475	1100	2000	2500
35	600	1400	2500	2500
50	700	1800	2500	2500
60	800	2100	2500	2500
75	900	2500	2500	
100	1400	2500		
125	1600			

For optimum performance, maximum inlet pressure should not exceed maximum capacity rating for any given orifice size.

Capacity 3/4" Outlet 1213B2 Regulator Set Point 2 PSIG @ 50 SCFH

SCFH 0.60 specific gravity gas @ 60° F & 14.7 PSIA. Pressure spring 70017P085. Outlet pressure variance not to exceed +/- 10% from set point, horizontal position.

Inlet (PSIG)	Orifice Size			
	1/8	3/16	1/4	5/16
3	75	100	150	150
5	125	175	225	250
10	175	250	350	375
15	225	350	475	500
25	325	475	650	750
35	350	600	850	1000
50	475	700	1100	1200
60	600	850	1200	1400
75	700	1000	1400	1800
100	900	1300		
125	1000			

For optimum performance, maximum inlet pressure should not exceed maximum capacity rating for any given orifice size.

Capacity 1" Outlet 1213B2 Regulator Set Point 2 PSIG @ 50 SCFH

SCFH 0.60 specific gravity gas @ 60° F & 14.7 PSIA. Pressure spring 70017P085. Outlet pressure variance not to exceed +/- 10% from set point, horizontal position.

Inlet (PSIG)	Orifice Size			
	1/8	3/16	1/4	5/16
3	75	125	150	150
5	125	175	225	250
10	175	250	325	375
15	225	325	400	400
25	300	425	600	600
35	375	500	750	900
50	475	700	1000	1100
60	550	800	1100	1200
75	650	1000	1400	1400
100	1000	1400		
125	1000			

For optimum performance, maximum inlet pressure should not exceed maximum capacity rating for any given orifice size.

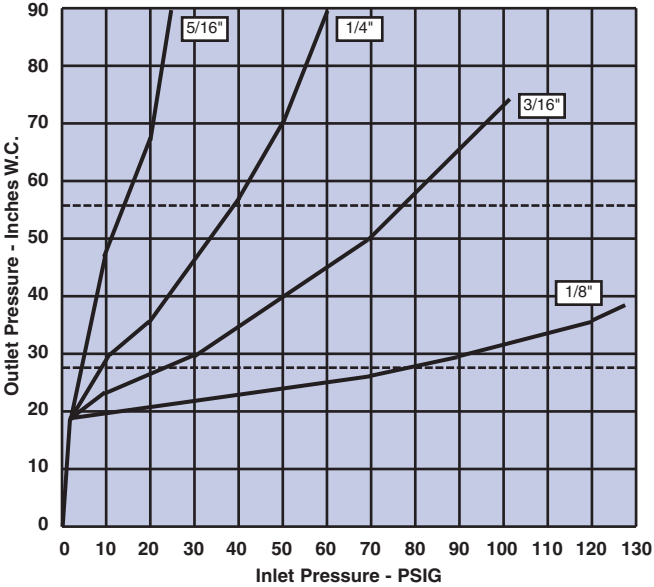
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1213B2 Regulator Relief Valve Performance

There are several methods of measuring the relief performance of a regulator. For the 1213B2 service regulator, the worst case scenario will occur when the lever is disconnected. The data presented in the tables below represent this condition.

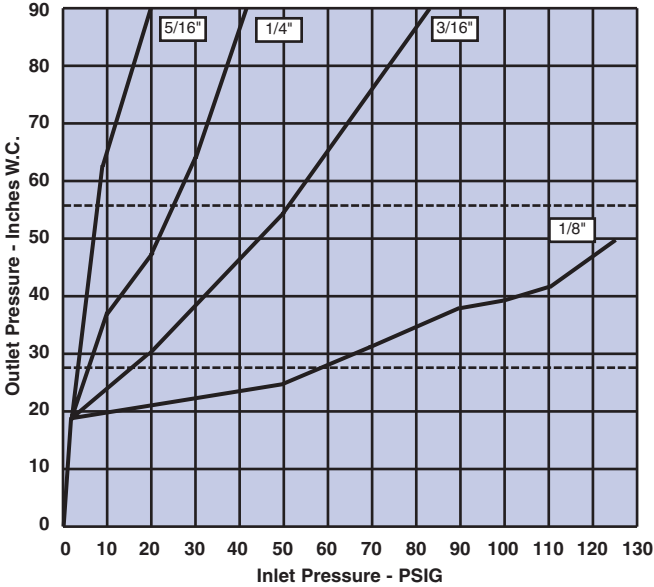
Outlet Pressure Relative To Inlet Pressure

3/4" Screened Vent - No Vent Pipe
Set Pressure 7" W.C.



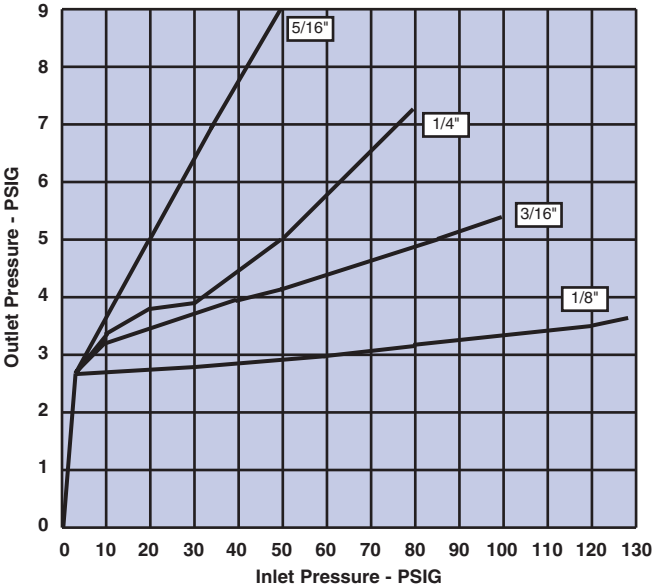
Outlet Pressure Relative To Inlet Pressure

3/4" Screened Vent - 10 Foot Vent Pipe with 2 Elbows
Set Pressure 7" W.C.



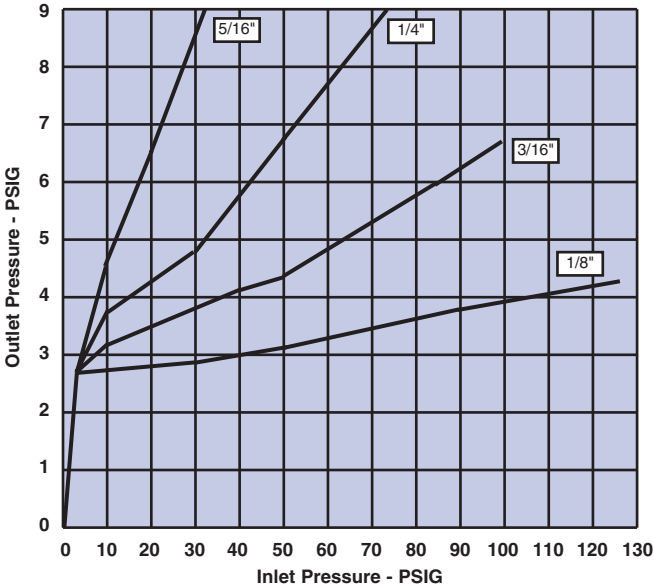
Outlet Pressure Relative To Inlet Pressure

3/4" Screened Vent - No Vent Pipe
Set Pressure 2 PSIG



Outlet Pressure Relative To Inlet Pressure

3/4" Screened Vent - 10 Foot Vent Pipe with 2 Elbows
Set Pressure 2 PSIG



1213B2 Service Regulators

Pressure Springs

Outlet Pressure	Color Code	Part Number 1213B2
3.5" to 7" W.C.	Light Blue	70017P083
5" to 9" W.C.	Lavender	70017P084
6" to 15" W.C.	Light Gray	70017P088
18" to 2 PSIG	Light Green	70017P085
2 to 4 PSIG	Pink	70017P086
4 to 5 PSIG	Turquoise	70017P087

Maximum Recommended Inlet Pressure

Orifice Size	Inlet Pressure (PSIG)
1/8"	125
3/16"	125
1/4"	125
5/16"	100

Orifice Sizes

Orifice Size	Part Number 1213B2
5/16"	72494P022
1/4"	72494P043
3/16"	72494P042
1/8"	72494P040

Full Open Regulator Relief Capacity

For sizing downstream relief valves, use the following formulas to determine the regulator full open capacity:

For critical flow rates For sub-critical flows

$$Q = 0.5 C \times \frac{P_1}{\sqrt{G}}$$

$$Q = C \frac{\sqrt{P_2 h}}{\sqrt{G}}$$

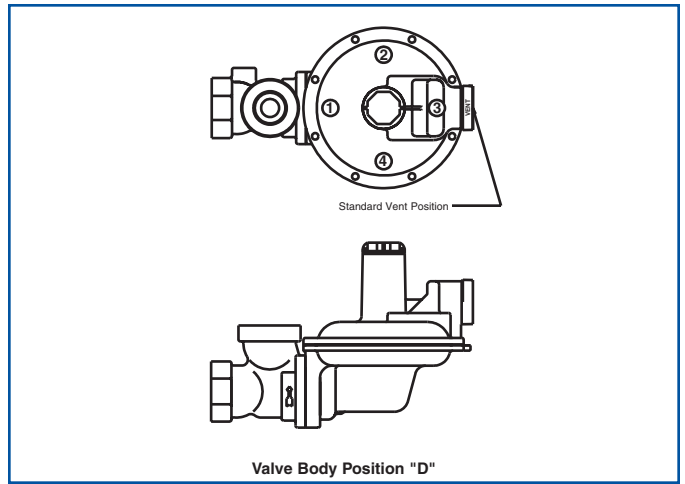
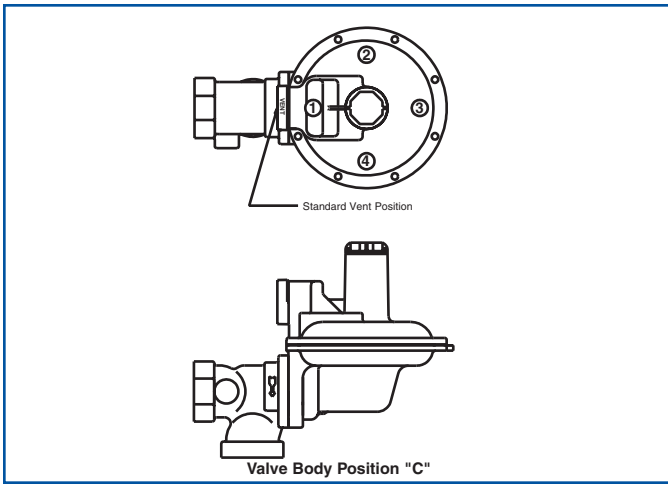
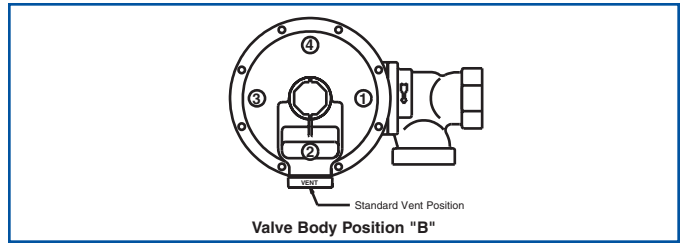
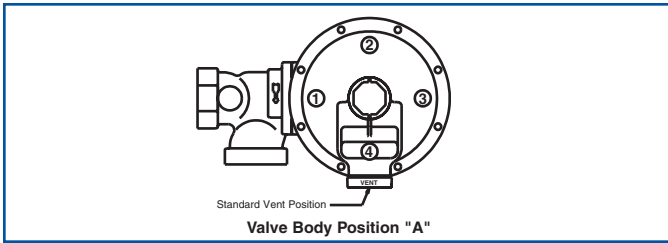
Key:

- Q = Maximum capacity of regulator
- C = Orifice constant, see table
- P₁ = Inlet absolute pressure (PSIA)
- P₂ = Outlet absolute pressure (PSIA)
- h = Differential pressure (P₁ - P₂)
- G = Specific gravity of gas

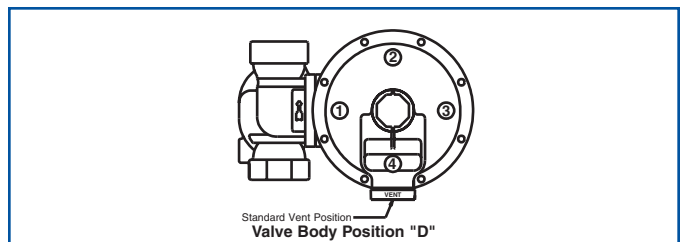
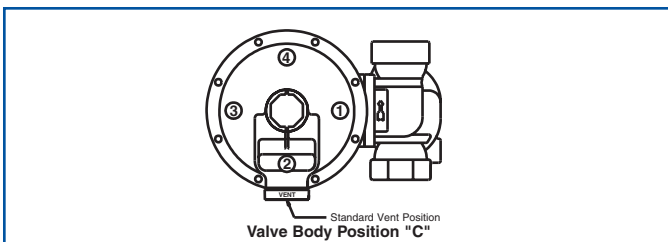
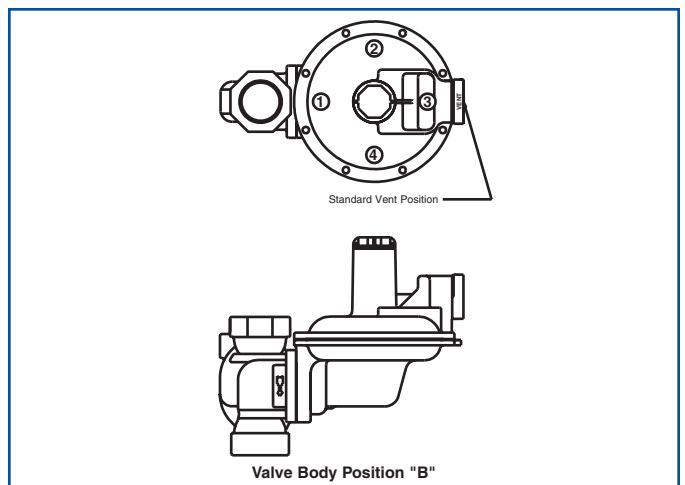
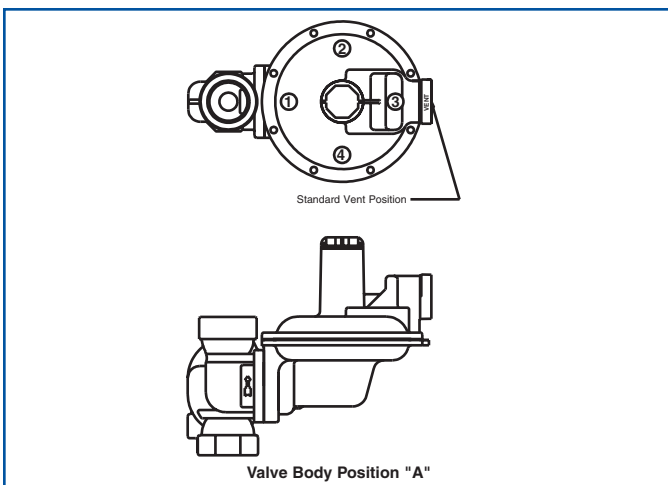
Orifice	C
1/8"	20
3/16"	46
1/4"	80
5/16"	150

1213B2 Service Regulators

Regulator Assembly Positions For 90° Models



Regulator Assembly Positions For 180° Models



1213B2 Service Regulators

Construction

Lower Diaphragm Case - Precision die cast aluminum with a exclusive 7-step advanced conversion coating, single coat polyester primer and High Solid Polyurethane Top Coat.

Top Assembly - Precision die cast aluminum with a exclusive 7-step advanced conversion coating, single coat polyester primer and High Solid Polyurethane Top Coat.

Valve Body - Cast grey iron, undercoated, single coat polyester primer and High Solid Polyurethane Top Coat, (Rotates in 90 degree increments).

Pressure Spring - Steel, Zinc plated and yellow chromate. Color coded for identification.

Diaphragm Plate - Steel, terne plated.

Seat Disc - Buna-N.

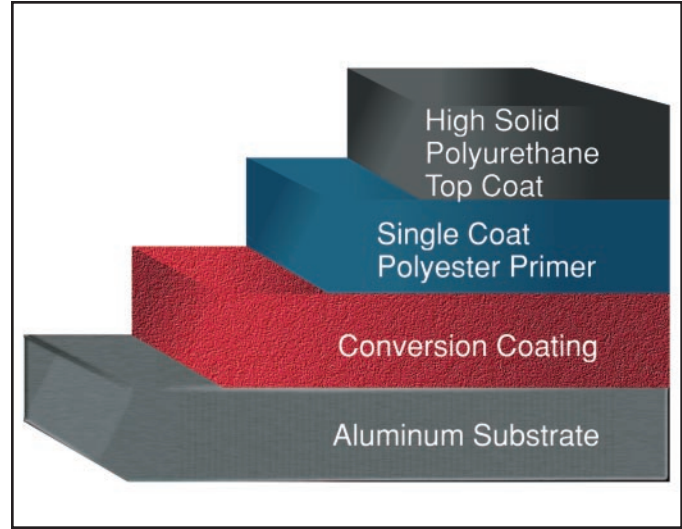
Orifice - Super high strength, corrosion-resistant, aluminum.

Lever - Stamped aluminum.

Vent Screen - Stainless steel.

Seal Plug - Ultraviolet stabilized, minlon.

Corrosion Protection



Ordering Information

- 1 Model number.
- 2 Size of inlet and outlet.
- 3 Inlet pressure, psi.
- 4 Outlet pressure, inches W.C. (or PSIG).
- 5 Flow, scfh.
- 6 Kind and specific gravity of gas.
- 7 Orifice size.
- 8 Regulator assembly position number.
- 9 Possible variation in inlet pressure for E.C. Orifice models.
Maximum _____ PSIG
Minimum _____ PSIG

Shipping Weight -

28 lbs/carton of eight regulators

Regulator Pressure Rating

125 PSIG = Maximum recommended inlet pressure for normal service. Maximum recommended pressure may vary with orifice size.

175 PSIG = Maximum inlet pressure for abnormal or emergency service, without causing damage to regulator case.

5 PSIG = Maximum outlet pressure for normal service.

10 PSIG = Maximum outlet pressure which can be contained by pressure carrying components (no flange leakage to atmosphere except for normal relief action). ***If regulator is subjected to these conditions, it should be removed from service.***

50 PSIG = Maximum outlet pressure for abnormal service without damage to internal components. ***If regulator is subjected to these conditions, it should be removed from service.***

Due to continuous development the information in this document is subject to change.



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