

# Pressure Regulators Reducing Models 227/414

Gas/Air/Liquid Service



**Masoneilan**

**DRESSER**

## Table of Contents

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Specifications .....	2
Product Selection Information .....	3
Regulator Sizing .....	4
Section View .....	5
Materials .....	6
Dimensions and Weights .....	6

## Foreword

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The Masoneilan Models 227/414 are self contained regulators for pressure reducing applications.

In sizes 1 1/4" - 2" the Model 227 is suitable for liquid service only. The Model 414 is suitable for air or gas service and is provided with an internal baffle plate and an external sensing port for stability.

In the 1/4" - 1" size the Model 414 is suitable for air, gas and liquid service.

The most common usage for these regulators is water and air service. However, the units can be used in any application where the process fluid is compatible with the materials of construction.

## Specifications

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Critical Flow Factor	$F_L = 0.9$
Body Material	Bronze
End Connections	Threaded NPT
Temperature Range	-20°F to 125°F
Maximum Inlet Pressure Rating	150 psi
Valve Plug	Bronze with Elastomer Disc
Diaphragm	Nylon Reinforced Neoprene

## Product Selection Information

Model	Service	Size (in.)	C <sub>v</sub>	Range (psi)	Unit Number
227	Liquids	1¼	5.6	10-40	807227-000-040
				30-60	807227-000-060
				60-120	807227-000-120
		1½	8.0	10-40	808227-000-040
				30-60	808227-000-060
				60-120	808227-000-120
		2	14.0	15-40	809227-000-040
				30-60	809227-000-060
				60-120	809227-000-120
414	Air,	¼	0.22	10-60	802414-000-060
				40-100	802414-000-100
	Gas,	½	0.88	10-50	804414-000-060
				40-100	804414-000-100
	Liquids	¾	2.0	10-60	805414-000-060
				40-100	805414-000-100
				10-60	806414-000-060
	1	3.6	40-100	806414-000-100	
			10-40	807414-000-040	
			30-60	807414-000-060	
	1½	5.6	60-120	807414-000-120	
			10-40	808414-000-040	
			30-60	808414-000-060	
	2	8.0	60-120	808414-000-120	
			15-40	809414-000-040	
30-60			809414-000-060		
14.0	60-120	809414-000-120			

## Regulator Capacity

Water (gpm)

Pressure Drop Inlet Minus Outlet Pressure	Regulator Size (in)						
	1/4	1/2	3/4	1	1 1/4	1 1/2	2
10	.7	2.8	6	11	18	26	45
15	.9	3.4	8	14	22	32	55
20	1	4	9	16	25	37	64
25	1.1	4	10	18	28	40	70
30	1.3	5	11	20	31	45	78
35	1.3	5	12	21	33	48	82
40	1.4	6	13	23	35	52	90
45	1.5	6	14	25	38	54	94
50	1.6	6	14	25	40	56	99
60	1.7	7	16	28	44	63	110
70	1.9	7	17	30	47	67	117
80	2	8	18	32	50	73	125
90	2.1	8.2	19	34	53	76	133
110	2.3	8.5	20	36	56	80	145
130	2.5	10	23	40	63	90	160

Minimum reduced pressure is 10 psi

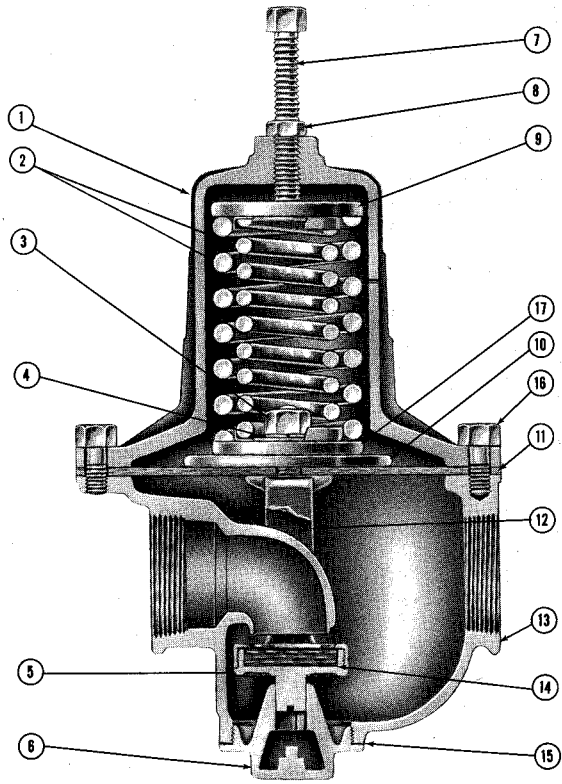
Air (scfm)

Inlet Pressure psig	Outlet Pressure psig	Regulator Size (in)						
		1/4	1/2	3/4	1	1 1/4	1 1/2	2
30	10-20	7.4	21	48	85	135	183	330
50	10-20	8.7	34	79	140	226	318	574
	30	7.2	28	66	120	186	268	470
	40	5.4	22	49	87	134	197	352
60	10-25	9.8	40	90	159	256	366	648
	40	7.7	31	72	129	199	290	505
	50	5.7	23	52	93	149	216	370
75	10-30	11	45	101	183	293	428	734
	50	9.4	38	86	156	248	356	615
	60	7.6	30	68	124	197	280	500
100	10-50	16	61	140	256	391	562	978
	60	13	53	122	222	345	500	870
	80	9.8	40	92	161	260	365	630
125	10-60	18	75	171	305	477	686	1200
	80	15	63	143	264	400	530	940
	100	12	49	110	204	310	430	800
150	10-60	22	88	202	360	575	830	1470
	100	19	73	164	295	450	630	1000

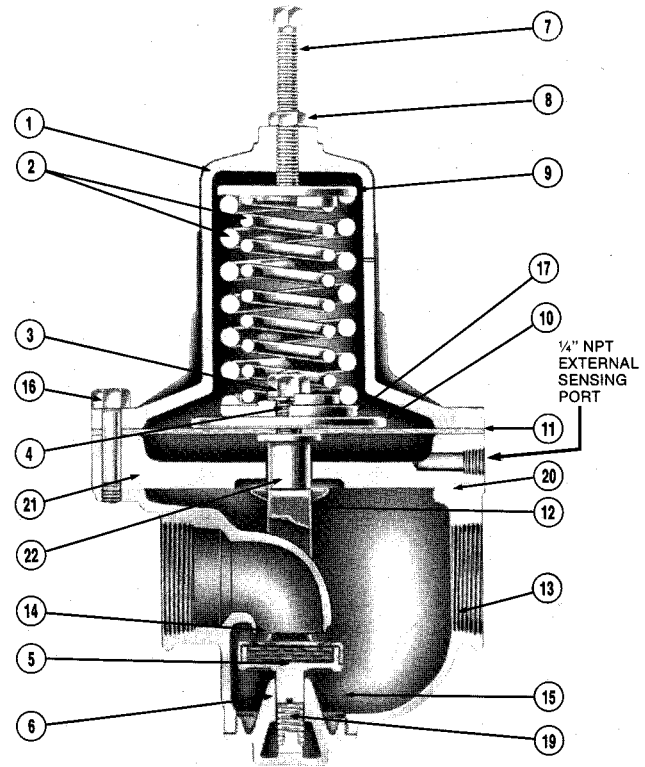
Minimum reduced pressure is 10 psi

**Note:** These tables are for selecting the proper regulator size for common applications. They are not intended to limit the operating conditions. To size a regulator for other applications, use the standard valve sizing equations in Masoneilan bulletin OZ1000 along with the information in this Specification Data.

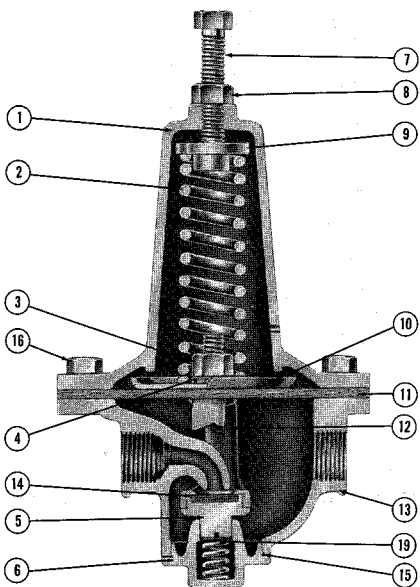
Section Views



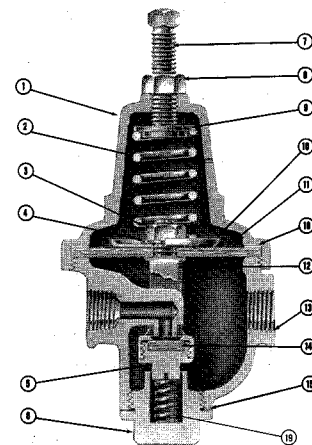
1 1/4 - 2 inch  
Model 227



1 1/4 - 2 inch  
Model 414



1/2 - 1 inch  
Model 414



1/4 inch  
Model 414

## Materials

Ref. No.	Description	Materials
1	Spring Case 1/4" - 1" 1 1/4" - 2"	Bronze Alloy ASTM B62 Cast Iron ASTM A126 CL B
2	Range Spring	Carbon and Alloy Spring Steel
3	Locknut 1/4" 1/2" - 2"	General Brass Carbon Steel SAE J995C
4	Lock washer	Carbon Steel SAE J489B
5	Disc Holder 1/4" - 1"	General Brass ASTM B62
6	Body Plug 1 1/4" - 2"	Bronze Alloy ASTM B62
7	Adjusting Screw	Carbon Steel SAE J429h Gr 5
8	Adjusting Screw Locknut	Carbon Steel SAE J995C Gr 2
9	Spring Button (upper)	Carbon Steel ASTM A668 CL BH
10	Diaphragm Button 1/4" 1/2" - 2"	Steel "USS Mach 5" Forged Steel ASTM A668 CL BH
11	Diaphragm	Neoprene Rubber with Nylon Insert
12	Yoke	Bronze Alloy ASTM B62
13	Body	Bronze Alloy ASTM B62
14	Disc	Nitrile
15	Body Plug Gasket	General Brass
16	Cap Screws	Carbon Steel ASTM A449
17	Spring Button (lower)	Carbon Steel ASTM A668 CL BH
*18	Spring Case Gasket	Brass (1/4" only) ASTM B152
*19	Valve Spring	Stainless Steel ASTM A313 TY 302 CL I
*20	O-Ring	Buna-N Rubber ASTM D1418 CL I NBR
*21	Diaphragm Chamber	Cast Iron ASTM A126 CL B
*22	Yoke Extension	General Bronze
Not Shown	Reducing Ring	Carbon Steel (1 1/4" - 2" 60-120 psi range) ASTM A36

\*For Model 414 Only

## Dimensions (in) Weights (lb)

Model	Regulator Size (in)	Dimensions		Net Weight
		A	C	
227	1 1/4	6 1/8	11 1/4	30
	1 1/2	6 1/8	11 1/4	32
	2	7 3/8	11 1/2	37
414	1/4	2 17/32	3 7/8	2
	1/2	3 5/8	6 13/16	7
	3/4	4 1/4	7	8
	1	4 1/4	7	8
	1 1/4	6 1/8	11 1/4	44
	1 1/2	6 1/8	11 1/4	44
	2	7 3/8	11 1/4	49

