

Masoneilan® 11 Series Reducing – Pilot Operated Pressure Regulators

Specification Data

CY1111

01/82



**Steam, Air and
Gas Service**



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Foreword

The Masoneilan 11 Series is a heavy-duty line of high capacity, internal pilot operated, bronze reducing valves for steam and air or gas service. Pilot operation results in pressure control more precise than comparable direct operated valves. They feature external handwheel adjustment of reduced pressure and an external sensing port for installation of a gauge or optional connection to downstream piping.

11 Series reducing valves provide close control of steam pressure for the operation of many types of power plant equipment. In industrial plants they are used on such apparatus as ovens, stills, cookers, dryers, presses, pasteurizers,

purifiers, sterilizers, mangles, washers, rendering machines, bleachers and vulcanizers. No. 11-11 valves are also widely used in office buildings, hospital and hotel heating systems.

An internal pilot coupled with a large main valve plug assures precise, stable control with very high capacity for each valve size. Construction is of super-finished bronze and stainless steel for long term, maintenance-free service. On the 11-11 valve, alloy stainless steel pilot and main valve plugs are carefully lapped to ensure tight shutoff. The No. 11-12 has a soft-seated main valve and pilot valve to ensure tight shutoff on air or gas service.

Service Application

Model	Service
11-11	Steam
11-12	Air or Gas

Note: Model 11-11 may be used on air or gas applications, however the model 11-12 will provide tighter shut-off characteristics.

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Sizes, Body Material, End Connections, C_v and F_L

Size (in.)	.5	.75	1	1.25	1.5	2
Flow Coefficient (C_v)	2	3.8	6.4	8.8	17	30
Critical Flow Factor	$F_L = 0.9$					
Body Material	Cast Bronze					
End Connections	Threaded NPT					
Diaphragm Material	Stainless Steel					
Piston	Bronze in mirror finished cylinder. Piston fitted with chrome plated cast iron rings.					

Trim Materials

Model	Trim	Materials
11-11	Main Valve	Hardened stainless steel plug Stainless steel seat ring
	Pilot Valve	Integral assembly of stainless steel valve and housing
11-12	Main Valve	Stainless steel plug with Buna-N insert Stainless steel seat ring
	Pilot Valve	Integral assembly of stainless steel plug with Buna-N insert and stainless steel housing

Reduced Pressure Ratings

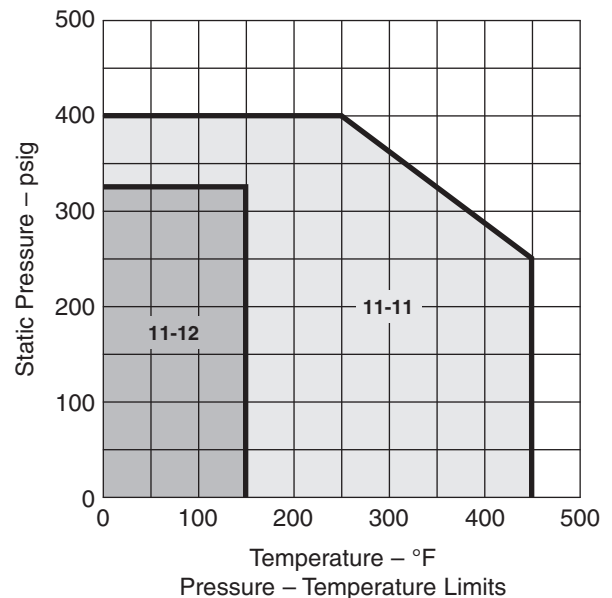
Reduced Pressure Ranges — psi

2-40
20-225

Pressure Drop Requirement

inlet pressure must exceed outlet pressure by 20 psi

Pressure/Temperature Limits



Valve Capacity® — Saturated Steam (lb/hr)

Inlet* Pressure (psig)	Outlet Pressure (psig)	Valve Size					
		.5	.75	1	1.25	1.5	2
30	2 - 10	159	282	526	728	1410	2480
50	2 - 20	224	420	752	1060	1915	3540
	30	194	350	621	840	1640	2840
60	2 - 25	252	478	858	1170	2260	4030
	40	210	379	672	947	1780	3120
75	2 - 30	317	585	1040	1420	2680	4880
	50	254	457	820	1120	2160	3880
100	2 - 50	403	732	1320	1760	3420	6100
	60	356	640	1160	1560	3000	5350
	80	270	483	875	1170	2290	4050
125	2 - 60	488	900	1610	2200	4270	7560
	80	418	757	1360	1850	3630	6370
	100	323	585	1070	1420	2820	5000
150	2 - 70	594	1070	1930	2540	4880	8800
	100	492	874	1570	2140	4150	7310
	125	362	630	1160	1570	3000	5380
175	2 - 90	684	1220	2240	3030	5860	10400
	100	616	1120	2010	2740	5360	9350
	125	516	945	1680	2240	4530	7990
	150	380	697	1230	1720	3280	5850
200	2 - 100	732	1370	2440	3420	6350	11600
	125	657	1200	2140	2940	5570	10000
	150	574	1040	1870	2550	5000	8700
	175	419	736	1310	1800	3480	6140
225	2 - 120	830	1470	2680	3710	7080	12800
	150	724	1270	2280	3160	6030	10700
	175	600	1100	1940	2610	5050	9060
	200	439	775	1390	1920	3670	6540
250	2 - 130	940	1760	3030	4100	8200	14400
	150	856	1530	2710	3700	7220	13000
	175	770	1380	2460	3290	6500	11400
	200	638	1150	2050	2840	5330	9620
	225	457	813	1460	1990	3860	6810

Inlet pressure must exceed outlet pressure by at least 20 psi.

NOTE: No. 11-11 Valve is provided with a tapped connection which may be used for a gauge when external control pipe is not required. This connection should be utilized as an external connection when expanded outlet piping is used (or when valve is installed in a line larger than nominal valve size), to insure maximum efficiency and accuracy of control at above capacities.

① Valve capacity tables are included to provide convenience on common applications – they are not intended to establish application limitations. If your particular service conditions are not listed in the valve capacity table, calculate the required C_V for selecting the optimum regulator size.

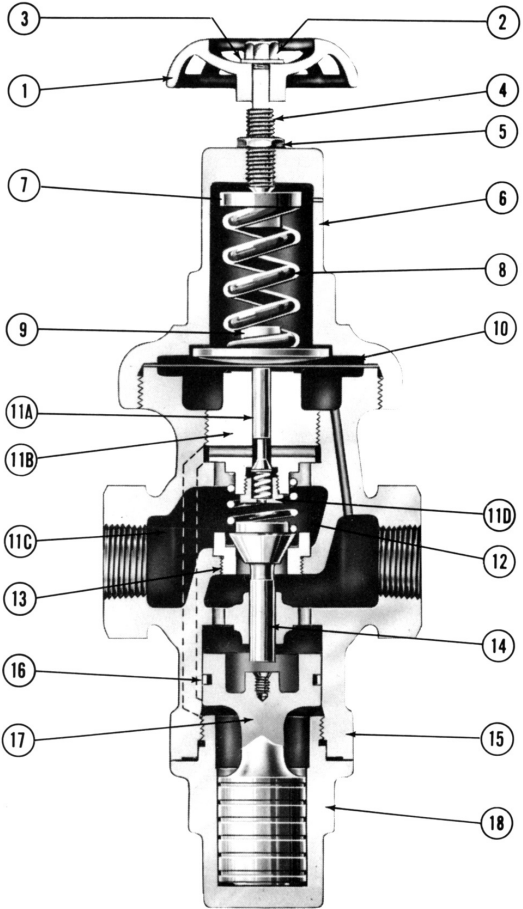
Valve Capacity® — Air (scfm)

Inlet* Pressure (psig)	Outlet Pressure (psig)	Valve Size					
		.5	.75	1	1.25	1.5	2
30	2 - 10	54	95	176	242	468	825
50	2 - 20	76	140	250	354	651	1180
	30	65	116	208	280	547	940
60	2 - 25	88	159	287	390	752	1340
	40	70	127	224	316	590	1040
75	2 - 30	105	195	342	468	895	1620
	50	85	153	274	374	720	1300
100	2 - 50	134	244	440	585	1140	2040
	60	118	214	386	513	1000	1780
	80	90	161	293	390	766	1360
125	2 - 60	164	299	537	732	1430	2520
	80	139	253	456	616	1210	2120
	100	108	195	357	475	940	1670
150	2 - 70	198	358	645	846	1620	2920
	100	164	290	524	713	1380	2430
	125	120	209	386	533	1000	1790
175	2 - 90	227	408	750	1010	1950	3450
	100	205	374	668	913	1790	3120
	125	172	316	560	745	1510	2660
	150	127	320	410	575	1100	1950
200	2 - 100	244	456	813	1140	2110	3870
	125	219	400	715	980	1860	3340
	150	191	348	623	850	1670	2900
	175	139	246	436	600	1160	2050
225	2 - 120	276	488	898	1230	2360	4270
	150	241	425	760	1050	2000	3580
	175	200	365	645	870	1690	3020
	200	147	260	465	640	1220	2190
250	2 - 130	312	586	1010	1360	2720	4800
	150	287	515	905	1230	2400	4330
	175	256	462	810	1090	2170	3800
	200	214	383	685	950	1780	3220
	225	152	270	488	665	1290	2270
275	2 - 130	352	606	1130	1520	2970	5240
	175	305	535	970	1320	2570	4550
	200	270	480	875	1180	2290	4050
	225	225	400	728	985	1910	3360
300	2 - 150	383	676	1230	1660	3230	5690
	175	350	616	1130	1510	2950	5210
	200	318	565	1030	1390	2700	4760
	225	278	503	920	1240	2400	4240
325	2 - 170	410	726	1330	1790	3480	6140
	200	372	657	1200	1620	3140	5550
	225	333	590	1080	1460	2840	5000

*Inlet pressure must exceed outlet pressure by at least 20 psi.

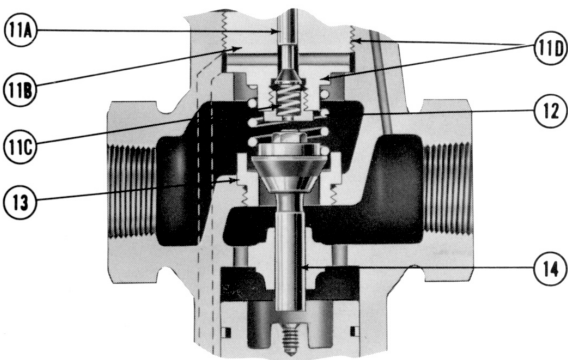
NOTE: No. 11-12 Valve is provided with a tapped connection which may be used for a gauge when external control pipe is not required. This connection should be utilized as an external connection when expanded outlet piping is used (or when valve is installed in a line larger than nominal valve size), to insure maximum efficiency and accuracy of control at above capacities.

Materials

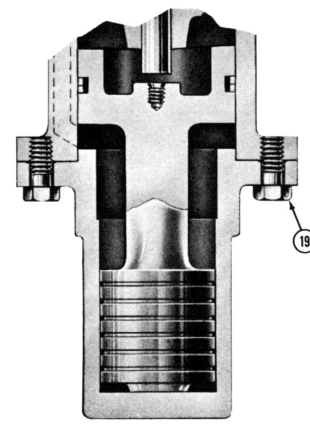


Model 11-11

Ref. No.	Part Name	Material
1	Handwheel	Aluminum
2	Locknut	300 Series Stainless Steel
3	Washer	Carbon Steel
4	Adjusting Screw	416 Stainless Steel
5	Locknut	Carbon Steel
6	Spring Case	Bronze Alloy ASTM B 62
7	Spring Button	Free Cutting Steel
8	Range Spring	Carbon and Alloy Spring Steel
9	Diaphragm Button	Free Cutting Steel
10	Diaphragm	302 Stainless Steel ASTM A 167 TP 302
11A	Pilot Valve Plug	11-11 Stainless Steel
		11-12 Stainless Steel with Buna-N insert
11B	Pilot Valve Housing	Stainless Steel
11C	Pilot Valve Spring	302 Stainless Steel
11D	Spring Retainer	Brass
12	Main Valve Spring	302 Stainless Steel
13	Seat Ring	Stainless Steel
14	Main Valve Plug	11-11 Hardened Stainless Steel
		11-12 Stainless Steel with Buna-N insert
15	Body	Bronze Alloy ASTM B 62
16	Piston Rings	Chrome plated Cast Iron
17	Piston	Bronze Alloy ASTM B 62
18	Dash Pot	Bronze Alloy ASTM B 62
19	Dash Pot Cap Screws	Carbon Steel
Not Shown	Pipe Plug	Brass



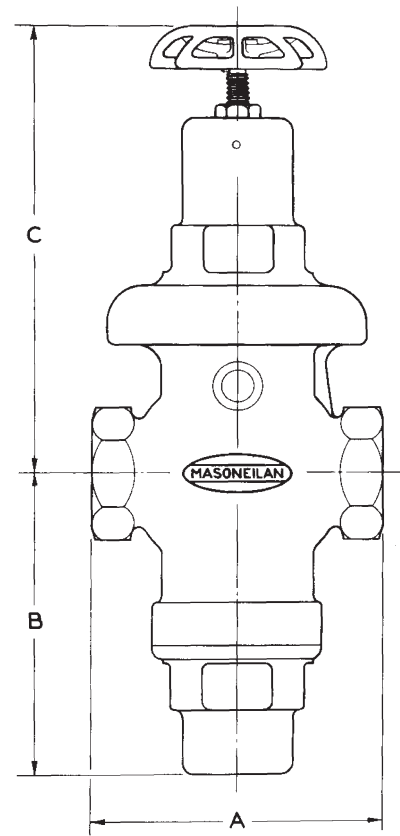
Model 11-12



Dashpot section of 1.5" and 2" sizes showing bolted construction.

Dimensions (in.) and Weights (lb)

Valve Size	Dimensions			Weights
	A	B	C	
.5	3.625	4.125	6.875	11
.75	3.625	4.125	6.875	11
1	4.625	5	7.375	15
1.25	5	6.125	7.375	17
1.5	5.75	7.375	7.75	23
2	7.0625	9	8.125	36



Part Numbers

Valve Size	Range (psi)	Part Numbers	
		Model 11-11	Model 11-12
.5	2-40	804011-011-040	804011-012-040
	20-225	804011-011-225	804011-012-225
.75	2-40	805011-011-040	805011-012-040
	20-225	805011-011-225	805011-012-225
1	2-40	806011-011-040	806011-012-040
	20-225	806011-011-225	806011-012-225
1.25	2-40	807011-011-040	807011-012-040
	20-225	807011-011-225	807011-012-225
1.5	2-40	808011-011-040	808011-012-040
	20-225	808011-011-225	808011-012-225
2	2-40	809011-011-040	809011-012-040
	20-225	809011-011-225	809011-012-225

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