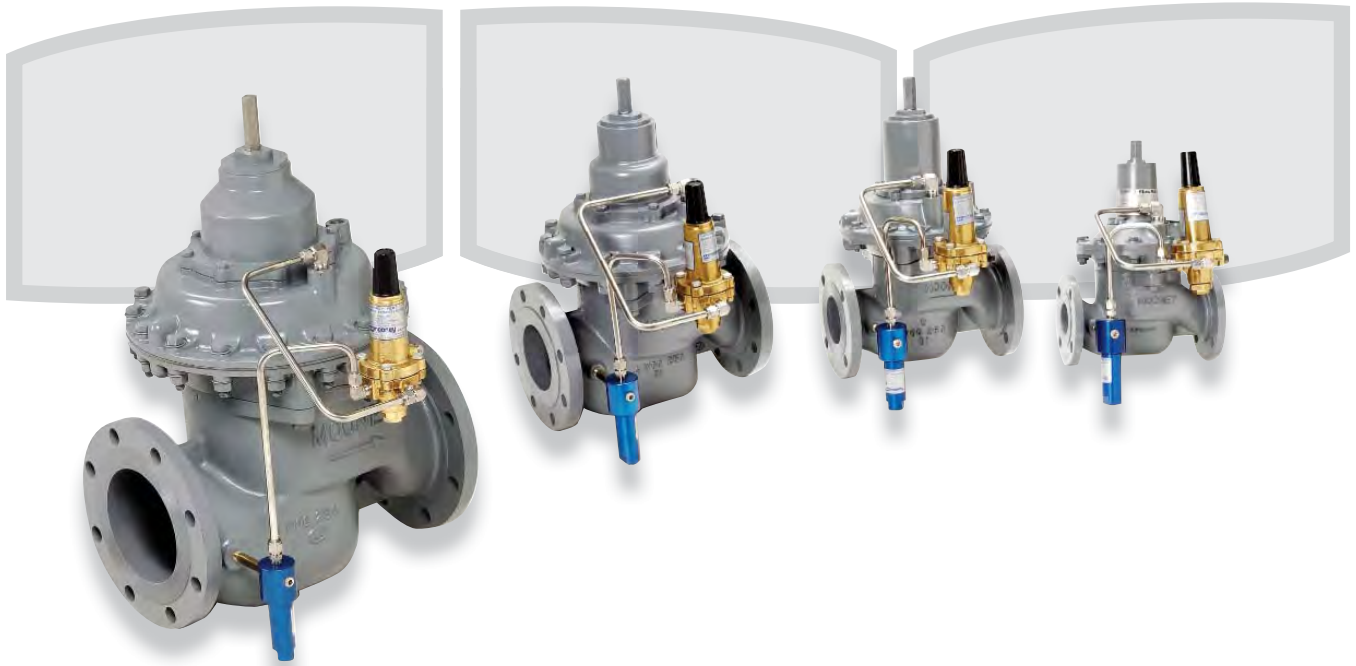




The FlowMax[®] Regulator is designed for ease of maintenance





Mooney® FlowMax® Regulator

The FlowMax® regulator is a new pressure reducing regulator that offers bubble tight shut-off at all pressure differentials and full capacity at very low differential pressures. It is an equally innovative design that compliments the Flowgrid® regulator. The FlowMax® regulator maximizes capacity, speed of response, and accuracy while incorporating many of the same original maintenance and performance features for which the Flowgrid® regulator is renowned.

Features

- Top-entry design for ease of maintenance
- One actuator for all pressure control ranges
- Oversized balanced diaphragm provides shut off force
- Full portal designs for ultra high capacity
- Guiding piston
- One actuator for all pressure ranges
- Positive bubble tight shut-off at all pressure differentials
- Control range - 5 i.w.c. to 247 psig
- Full open differential - 3 psig
- Quick acting two-path pilot control system
- Low-volume casing (actuator)
- Lightweight and compact design
- Reversible plug seal

Applications

- District regulator
- Monitor and first stage regulator
- Industrial service regulator
- Boiler/burner fuel gas regulator



Principle of Operation

Pressure Relieving Valve

When the downstream pressure is greater than the set point of the pilot, the pilot is closed, resulting in equal pressure above and below the main diaphragm. With a balancing diaphragm area slightly larger than the seat area, the resulting closing force, along with the force of the main spring, forces the plug against the seat.

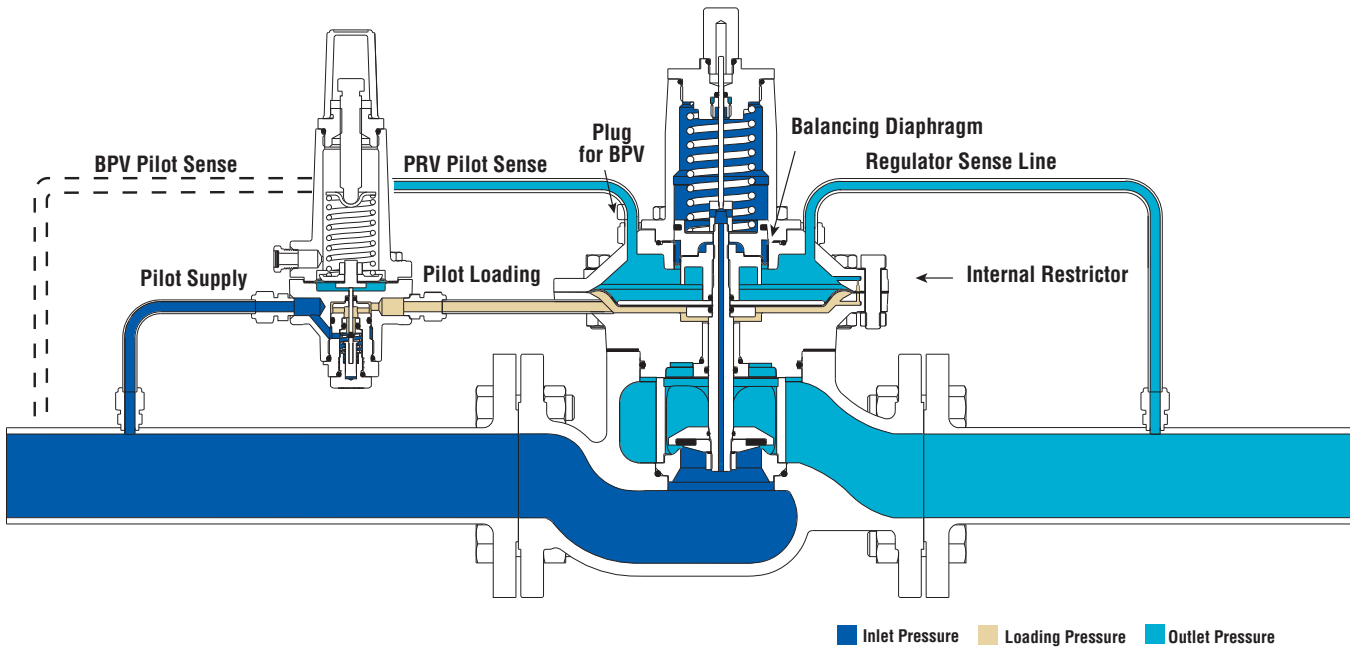
With an increase in demand, the outlet pressure will begin to drop and decrease the pressure above the main diaphragm. The drop of the outlet pressure below the pilot set point will cause the pilot to open. As the pilot opens, pressure increases underneath the main diaphragm faster than pressure can bleed through the internal restrictor. The imbalance in pressure on the main diaphragm overcomes the spring force and the additional closing force from the balancing diaphragm, causing the plug to rise off the seat and satisfy the flow demand.






Once the flow demand is satisfied and the downstream pressure begins to increase, the pressure above the main diaphragm and in the pilot sense cavity rises.






This causes the pilot to close. The pressure below the main diaphragm bleeds through the internal restrictor until pressure equalizes above and below the main diaphragm. The forces of the main spring and the over-sized balancing diaphragm then close the plug on the seat.

Back Pressure Valve

In a back pressure relief application (BPV) the valve functions to maintain upstream pressure at the pilot set point. The sense line for the control pilot is located upstream of the regulator. The extra pilot sense port is plugged for BPV pilot configuration. The action of the pilot is the reverse of a pressure reducing pilot, such that the pilot opens when the upstream pressure increases above its set point. The pilot will close when the upstream pressure is less than its set point.



Spring Color	Type 20™ Pilot	Outlet Pressure Range
White 	20L	5-15 i. w. c.
Brown 	20L	10-40 i. w. c.
Yellow 	20L	1-3 psig
Orange 	20L	2-5 psig
Gray 	20L	4-8 psig

Spring Color	Type 20™ Pilot	Outlet Pressure Range
Red 	20	3-12 psig
Cadmium 	20	10-40 psig
Blue 	20	25-90 psig
Purple 	20	60-200 psig
Black 	20	100-260 psig

Specifications for 1"

Body Size	2"	3"	4"	6"
End Connection	NPT ANSI CL 150 RF CL 150 FF**	ANSI CL 150 RF CL 150 FF**	ANSI CL 150 RF CL 150 FF**	ANSI CL 150 RF CL 150 FF**
Minimum Differential (fully open)	3 psig	4 psig	4 psig	4 psig
Maximum Inlet Pressure	250 psig	250 psig	250 psig	250 psig
Maximum Outlet Pressure	250 psig	250 psig	250 psig	250 psig
Maximum Casing Pressure	250 psig	250 psig	250 psig	250 psig
Outlet Pressures Series 20 Pilot Series 20L Pilot	3 to 247 psig 5 i.w.c. - 8 psig	3 to 246psig 5 i.w.c. - 8 psig	3 to 246 psig 5 i.w.c. - 8 psig	3 to 246 psig 5 i.w.c. - 8 psig
Maximum Differential Pressure	250 psid	250 psid	250 psid	250 psid
Temperature Emergency Temperature	-20°F to 150°F -40°F to 175°F	-20°F to 150°F -40°F to 175°F	-20°F to 150°F -40°F to 175°F	-20°F to 150°F -40°F to 175°F
100% Capacity				
C_g	2,250	4,200	7,500	14,500
C₁	35	37	35	37
C_v	64	114	212	393
50% Capacity				
C_g	1,200	2,100	3,800	7,200
C₁	31*	32*	31*	31
C_v	39*	66*	123*	231
Face to Face Dimensions				
NPT	10.50	N/A	N/A	N/A
CL 150 RF & CL 150 FF	10.00	11.75	13.88	17.75
Weight				
NPT		N/A	N/A	N/A
CL 150 RF & CL 150 FF	31 lbs 36 lbs	59 lbs	103 lbs	190 lbs

* Estimated

** CL150 FF mates with 125 FF cast iron pipe.

Flow Capacity Charts (MSCFH)

Inlet Pressure (psig)	Outlet Pressure (psig)	2"	3"	4"	6"
3	0.25	32	57	107	197
	1	28	50	93	171
5	0.25	43	76	142	263
	1	40	71	133	245
	3	30	53	99	181
10	0.25	63	114	210	393
	1	62	111	205	382
	3	57	101	189	350
	5	50	89	166	307
15	0.25	80	146	268	505
	1	79	144	265	498
	3	76	138	254	475
	5	72	130	240	448
	10	56	99	185	342
25	0.25	97	177	323	610
	1	96	175	320	604
	3	94	170	312	587
	5	91	164	303	567
	10	80	143	266	495
30	15	61	108	203	373
	0.25	130	243	433	837
	1	130	243	433	837
	3	126	230	420	795
	5	124	226	414	782
	10	118	214	393	738
	15	108	195	361	673
40	20	94	167	312	578
	0.25	159	297	530	1025
	1	159	297	530	1025
	3	159	297	530	1025
	5	156	285	518	984
	10	151	276	505	952
	15	145	263	484	908
50	20	136	246	454	848
	30	106	189	353	651
	0.25	188	351	627	1212
	1	188	351	627	1212
	3	188	351	627	1212
	5	188	351	627	1212
50	10	183	335	610	1156
	15	179	325	595	1123
	20	172	312	575	1078
	30	153	274	509	946
	40	117	208	389	717

Inlet Pressure (psig)	Outlet Pressure (psig)	2"	3"	4"	6"
60	0.25	217	405	724	1399
	1	217	405	724	1399
	3	217	405	724	1399
	5	217	405	724	1399
	10	217	405	724	1399
	15	210	385	701	1328
	20	206	375	686	1293
	30	191	346	638	1193
	40	168	300	558	1036
	50	127	225	422	778
70	0.25	246	459	820	1586
	1	246	459	820	1586
	3	246	459	820	1586
	5	246	459	820	1586
	10	246	459	820	1586
	15	246	459	820	1586
	20	238	434	792	1499
	30	227	411	756	1419
	40	209	376	696	1298
	50	181	324	604	1119
80	60	136	242	453	834
	0.25	275	514	917	1773
	1	275	514	917	1773
	3	275	514	917	1773
	5	275	514	917	1773
	10	275	514	917	1773
	15	275	514	917	1773
	20	269	492	896	1700
	30	260	473	867	1633
	40	246	445	820	1536
100	50	225	405	751	1397
	60	194	347	647	1197
	70	145	257	482	887
	0.25	333	622	1111	2148
	1	333	622	1111	2148
	3	333	622	1111	2148
	5	333	622	1111	2148
	10	333	622	1111	2148
	15	333	622	1111	2148
	20	333	622	1111	2148
100	30	324	592	1079	2044
	40	314	572	1048	1974
	50	301	544	1002	1878
	60	282	507	938	1749
	70	255	457	850	1576

NOTE: High differentials may result in high outlet piping velocities. Swaging up outlet piping is required.

Flow Capacity Charts (MSCFH)

Inlet Pressure (psig)	Outlet Pressure (psig)	2"	3"	4"	6"	Inlet Pressure (psig)	Outlet Pressure (psig)	2"	3"	4"	6"
125	0.25	406	758	1353	2616	200	0.25	624	—	—	—
	1	406	758	1353	2616		1	624	1164	—	—
	3	406	758	1353	2616		3	624	1164	2079	—
	5	406	758	1353	2616		5	624	1164	2079	—
	10	406	758	1353	2616		10	624	1164	2079	4020
	15	406	758	1353	2616		15	624	1164	2079	4020
	20	406	758	1353	2616		20	624	1164	2079	4020
	30	406	758	1353	2616		30	624	1164	2079	4020
	40	394	721	1314	2488		40	624	1164	2079	4020
	50	385	701	1283	2419		50	624	1164	2079	4020
	60	372	675	1242	2330		60	624	1164	2079	4020
	70	356	642	1186	2217		70	605	1106	2017	3820
	100	268	477	893	1648		100	573	1038	1908	3582
150	0.25	478	893	1595	—	25	527	949	1757	3276	
	1	478	893	1595	—	150	457	817	1523	2821	
	3	478	893	1595	3084	175	343	609	1142	2010	
	5	478	893	1595	3084	225	3	696	1300	—	—
	10	478	893	1595	3084		5	696	1300	—	—
	15	478	893	1595	3084		10	696	1300	—	—
	20	478	893	1595	3084		15	696	1300	2321	4488
	30	478	893	1595	3084		20	696	1300	2321	4488
	40	478	893	1595	3084		30	696	1300	2321	4488
	50	464	849	1548	2932		40	696	1300	2321	4488
	60	455	930	1518	2864		50	696	1300	2321	4488
	70	444	805	1479	2780		60	696	1300	2321	4488
	100	386	693	1287	2392		70	696	1300	2321	4488
125	295	525	983	1812	100		656	1194	2188	4120	
175	0.25	551	1029	1837	—		125	621	1122	2069	3872
	1	551	1029	1837	—		150	568	1019	1892	3520
	3	551	1029	1837	—	175	489	873	1629	3013	
	5	551	1029	1837	—	200	364	646	1214	2232	
	10	551	1029	1837	—	250	3	769	—	—	—
	15	551	1029	1837	3552		5	769	1435	—	—
	20	551	1029	1837	3552		10	769	1435	2563	—
	30	551	1029	1837	3552		15	769	1435	2563	4956
	40	551	1029	1837	3552		20	769	1435	2563	4956
	50	551	1029	1837	3552		30	769	1435	2563	4956
	60	535	978	1783	3376		40	769	1435	2563	4956
	70	526	958	1752	3309		50	769	1435	2563	4956
	100	484	873	1613	3014		60	769	1435	2563	4956
125	423	757	1410	2615	70		769	1345	2563	4956	
150	320	568	1065	1961	100		737	1345	2458	4642	
					125		708	1284	2361	4433	
					150		666	1201	2220	4145	
					175	606	1086	2019	3749		
					200	519	925	1729	3194		
					225	385	682	1282	2355		

NOTE: High differentials may result in high outlet piping velocities. Swagging up outlet piping is required.

About Dresser® Products

Dresser brand products are highly engineered, technically superior and are designed to help global customers meet and exceed requirements for mission critical energy applications.

About Dresser, Inc.

Dresser, Inc. is a leader in providing highly engineered infrastructure products for the global energy industry. The company has leading positions in a broad portfolio of products, including valves, actuators, meters, switches, regulators, piping products, natural gas-fueled engines, retail fuel dispensers and associated retail point-of-sale systems, and air and gas handling equipment. Leading brand names within the Dresser portfolio include Dresser Wayne® retail fueling systems, Waukesha® natural gas-fired engines, Masoneilan® control valves, Consolidated® pressure relief valves, and Roots® blowers. It has manufacturing and customer service facilities located strategically worldwide and a sales presence in more than 100 countries.

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