

# P600 Pressure Regulator

The BelGAS P600 series is a direct operated, pressure reducing regulator that can be used as a pressure loaded regulator, switching valve, or monitoring regulator. Available with either an internal relief valve option or monitoring regulator option, the P600 is designed to maintain a constant, preset downstream pressure.



## Applications

- Industrial and Commercial Gas Regulation
- Compressors
- Gas Engines

## Materials of Construction

Adjusting Screw	Zinc
Body	Cast Iron
Bonnet	Cast Iron
Closing Cap	Acetal
Diaphragm	Nitrile
Housing	Cast Iron
Molded Seat Assembly	Nitrile / Aluminium
Upper/Lower Spring Seat	Plated Steel

## P600 Series Maximum Inlet Pressures

Orifice size, Inches (mm)	Table 1: Maximum Operation Inlet Pressure, PSIG (bar)		
	With 1.2 PSIG (0.08 bar) or Less Outlet Pressure Setting	With 1.2 to 2.5 PSIG (0.08 to 0.17 bar) Outlet Pressure Setting	With 2.5 to 7 PSIG (0.17 to 0.48 bar) Outlet Pressure Setting
1/8 (3.17)	150 (10.3)	150 (10.3)	150 (10.3)
3/16 (4.76)	150 (10.3)	150 (10.3)	150 (10.3)
1/4 (6.35)	75 (5.17)	150 (10.3)	150 (10.3)
3/8 (9.53)	35 (2.41)	60 (4.14)	60 (4.14)
1/2 (12.7)	8 (0.55)	10 (0.69)	12 (0.83)
9/16 (14.3)	5 (0.34)	6 (0.41)	8 (0.55)

## Specifications

Maximum Inlet	See Table 1
Maximum Emergency Outlet	10 PSIG
Pressure Ranges	See Table 2
Port Sizes	3/4 NPT 1 NPT
Orifice Sizes	1/8" 3/16" 1/4" 3/8" 1/2" 9/16"
End Connections	NPT
Temperature Range	-20° F to 180° F -29° C to 82° C
Approx Weight	14 lbs. (6.4 kg)
Spring Case Vent Connection	1/4 NPT
Diaphragm Case (Control Line) Connection	1/2 NPT

## P600 Series Range Springs

Table 2			
Spring Ranges		Spring Color	Part Number
W.C. or PSIG	BAR		
4 - 8" W.C.	.01 to .02	Red	655-732-000
7 - 16" W.C.	.017 to .04	Olive	655-732-001
15" W.C. to 1.2 PSIG	.037 to .08	Yellow	655-732-002
1.2 - 2.5 PSIG	.08 to .17	Light Green	655-732-003
2.5 - 4.5 PSIG	.17 to .31	Light Blue	655-732-004
4.5 - 7 PSIG	.31 to .48	Black	655-732-005

### P600 Regulator Rebuild Kits

	Kit Includes	Part Number
O & M Version	Diaphragm, body o-ring, insert o-ring, seat assembly, cotter pin, seat stem o-ring, throat seal o-ring	971-600-000
R Version	Diaphragm, body o-ring, insert o-ring, seat assembly, cotter pin	971-600-001

### P600 Part Matrix

P600								0
								Body
	06							3/4 NPT
	08							1 NPT
								Spring Range
		008						4-8 WC
		016						7-16 WC
		001						15 WC - 1.2 PSIG
		002						1.5 - 2.5 PSIG
		004						2.5 - 4.5 PSIG
		007						4.5 - 7 PSIG
								Options
								None
								Monitor Version
								Relieving Version
								Vent Assembly
								Up
								Down
								Orifice
								2 1/8"
								3 3/16"
								4 1/4"
								6 3/8"
								8 1/2"
								9 9/16"
								Body Position
								1 Up (Standard)
								2 Down
								3 Right
								4 Left
								Bonnet Vent Orientation
								C 12 O'Clock (Standard)
								D 3 O'Clock
								E 6 O'Clock
								F 9 O'Clock
								0

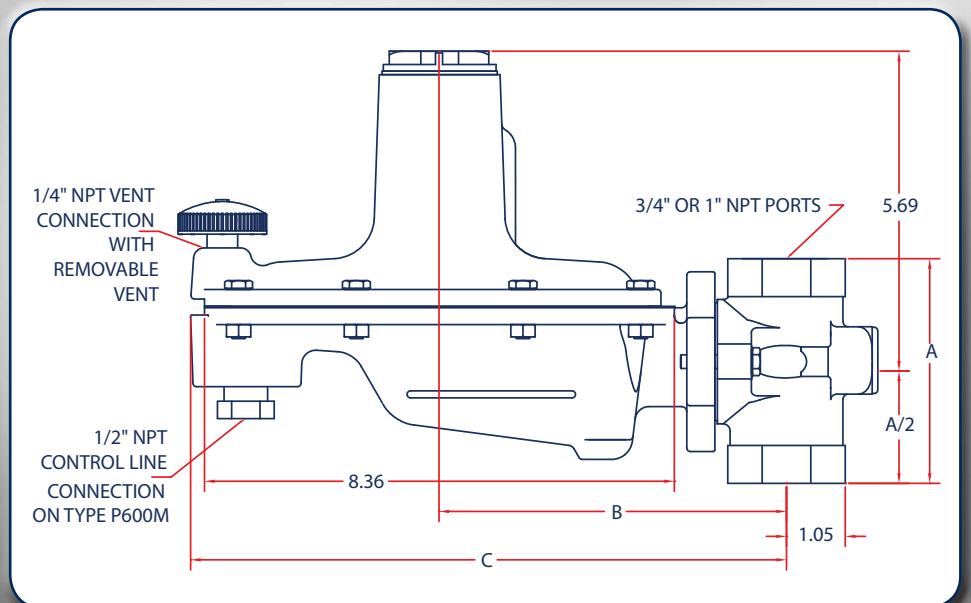
### P600 Internal Relief Discharge

Spring Range with Spring Case Upward	Internal Relief Start-to-Discharge Pressure Above Set Pressure
4 to 8 inches wc (10 to 20 mbar)	10 to 24 inches wc (25 to 60 mbar)
7 to 16 inches wc (17 to 40 mbar)	10 to 26 inches wc (25 to 65 mbar)
15 inches wc to 1.2 psig (37 to 83 mbar)	10 to 26 inches wc (25 to 65 mbar)
1.2 to 2.5 psig (0.08 to 0.7 bar)	0.5 to 2 psig (0.034 to 0.14 bar)
2.5 to 4.5 psig (0.17 to 0.31 bar)	0.5 to 3 psig (0.034 to 0.21 bar)
4.5 to 7 psig (0.31 to 0.48 bar)	1 to 4 psig (0.069 to 0.28 bar)

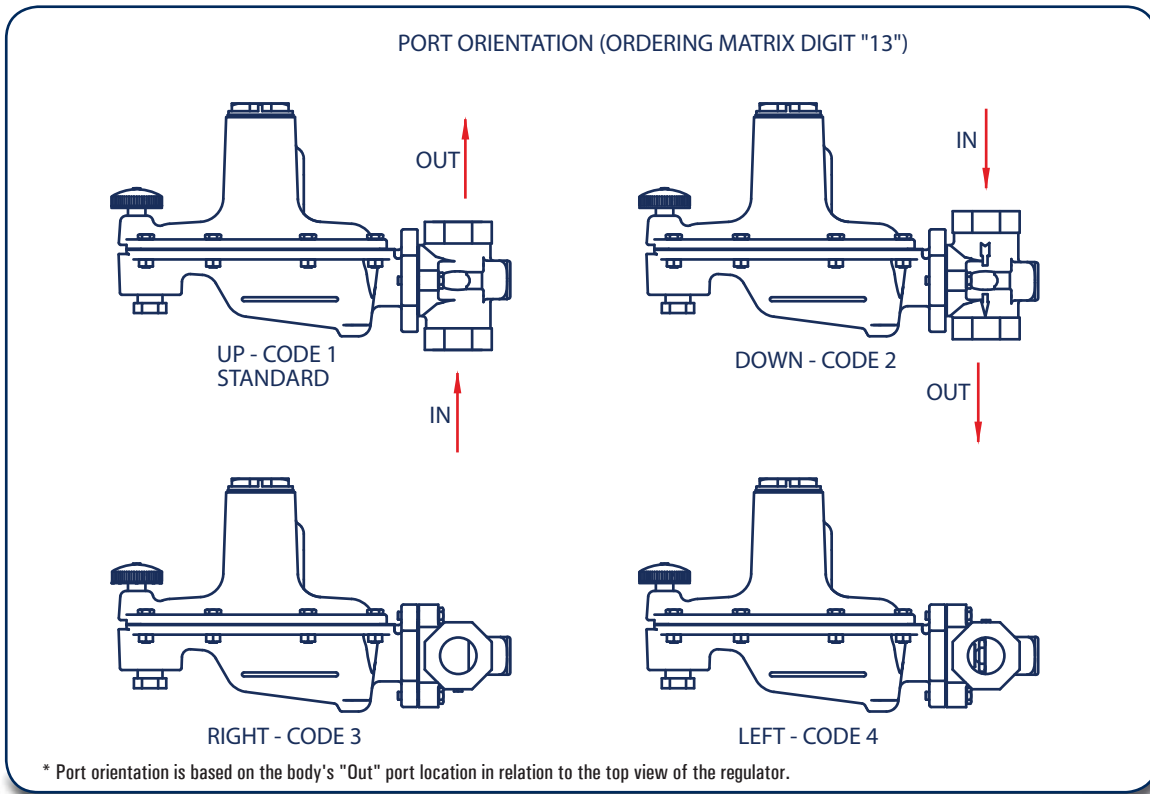
(Actual outlet pressure maybe lower with spring case downward.)

### P600D imensions

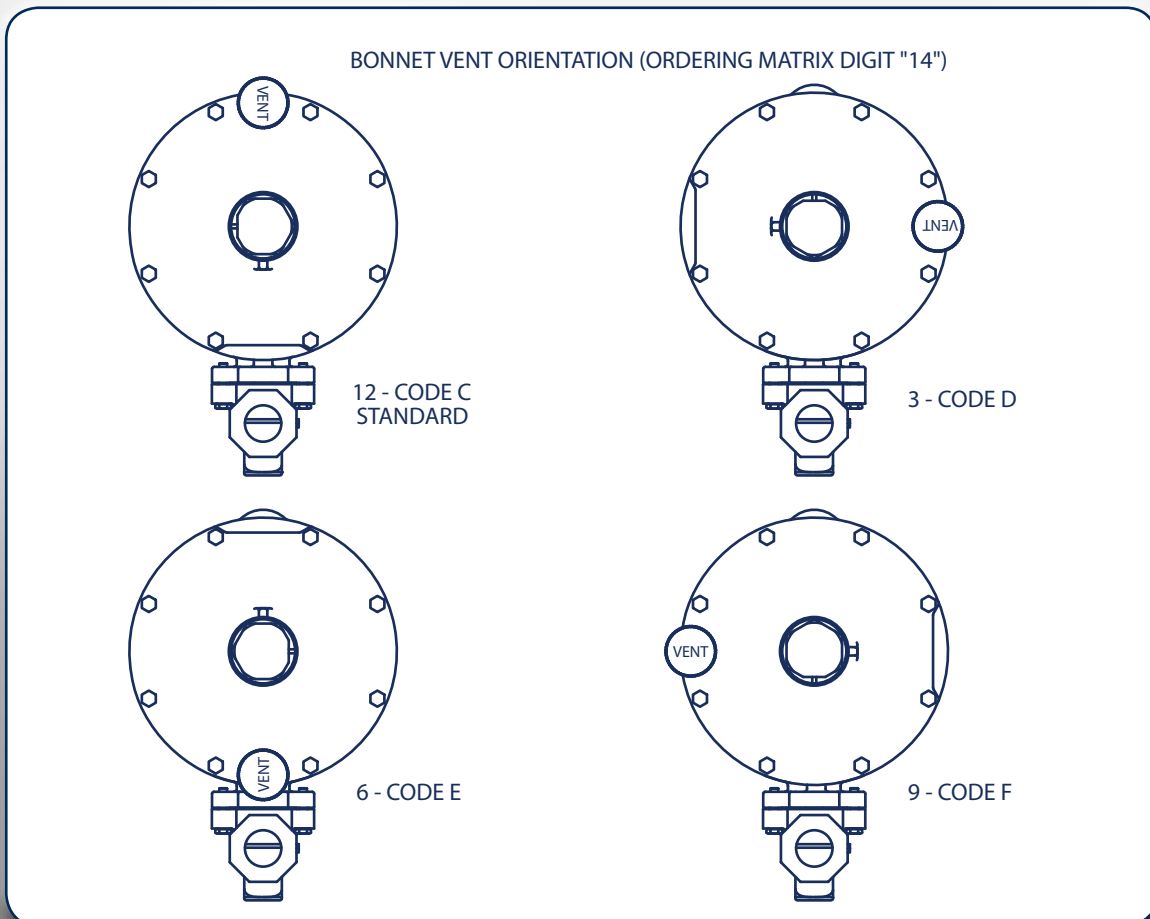
Body Size	A	B	C
Inches NPT	Inches	Inches	Inches
3/4	4	6.25	10.7
1	4	6.25	10.7



## P600 Port Orientation\*



## P600 Bonnet Vent Orientation



**P600 Flow Capacities in SCFH** (Nm<sup>3</sup>/h) of 0.6 Specific Gravity Natural Gas



Outlet Pressure Range	Offset from Setpoint	Outlet Pressure Setting	Inlet Pressure		NPT 3/4 Body Size						
			PSIG	BAR	Orifice Size, Inches (mm)						
					1/8 (3.2)	3/16 (4.8)	1/4 (6.4)	3/8 (9.5)	1/2 (12.7)	9/16 (14.3)	
4 to 8 inches w.c. (10 to 20 mbar)	1 inch w.c. (2 mbar)	7 inches w.c. (17 mbar)	1	0.069	90 (2.42)	170 (4.50)	230 (6.61)	250 (6.57)	410 (11.0)	440 (11.8)	
			5	0.34	220 (5.87)	280 (7.61)	450 (12.1)	490 (13.1)	520 (13.8)	970 (25.9)	
			8	0.55	230 (6.22)	480 (12.8)	530 (14.2)	540 (14.5)	590 (15.9)		
			20	1.4	520 (13.8)	600 (16.2)	620 (16.6)	650 (17.3)			
			35	2.4	660 (17.6)	670 (18.0)	840 (22.5)	900 (24.2)			
			75	5.2	770 (20.7)	840 (22.5)	960 (25.6)				
			150	10.3	1680 (44.9)	2310 (61.9)					
7 to 16 inches w.c. (17 to 40 mbar)	1 inch w.c. (2 mbar)	11 inches w.c. (27 mbar)	1	0.069	90 (2.42)	130 (3.46)	160 (4.15)	190 (5.20)	230 (6.22)	250 (6.57)	
			5	0.34	160 (4.15)	250 (6.57)	280 (7.61)	350 (9.33)	530 (14.2)	750 (20.0)	
			8	0.55	170 (4.50)	350 (9.33)	430 (11.4)	450 (12.1)	540 (14.5)		
			20	1.4	350 (9.33)	490 (13.1)	590 (15.9)	610 (16.2)			
			35	2.4	520 (13.8)	530 (14.2)	620 (16.6)	650 (17.3)			
			75	5.2	650 (17.3)	660 (17.6)	940 (25.2)				
			150	10.3	1680 (44.9)	2060 (55.3)					
15 inches w.c. to 1.2 psig (37 to 83 mbar)	5-1/2 inches w.c. (14 mbar)	15 inches w.c. (37 mbar)	2	0.14	90 (2.42)	340 (8.98)	500 (13.5)	900 (24.2)	1100 (29.4)	1150 (30.8)	
			6	0.41	250 (6.57)	540 (14.5)	930 (24.9)	1640 (43.9)	2100 (56.4)		
			10	0.69	340 (8.98)	800 (21.4)	1390 (37.0)	1940 (51.9)			
			30	2.1	680 (18.3)	1450 (38.7)	2390 (64.0)	2450 (65.7)			
			60	4.1	1160 (31.1)	2460 (66.0)	3480 (93.3)				
			150	10.3	2570 (68.8)	2710 (72.6)					
			1.2 psig (83 mbar)	2	0.14	90 (2.42)	260 (6.91)	410 (11.1)	600 (16.2)	810 (21.8)	700 (18.7)
	6	0.41	250 (6.57)	460 (12.4)	700 (18.7)	1290 (34.6)	1420 (38.0)				
	10	0.69	310 (8.31)	660 (17.6)	1020 (27.3)	1420 (38.0)					
	30	2.1	670 (18.0)	1109 (29.7)	2060 (55.3)	2430 (65.0)					
	60	4.1	1140 (30.4)	2180 (58.4)	3350 (89.9)						
	150	10.3	2480 (66.4)	2650 (70.9)							
	1.2 to 2.5 psig (83 to 172 mbar)	0.2 psig (14 mbar)	1.2 psig (83 mbar)	2	0.14	120 (3.11)	170 (4.50)	220 (5.87)	350 (9.33)	490 (13.1)	520 (13.8)
				6	0.41	180 (4.85)	340 (8.98)	450 (12.1)	740 (19.7)	850 (22.8)	1070 (28.7)
10				0.69	190 (5.20)	440 (11.8)	590 (15.9)	1010 (27.0)	1170 (31.5)		
30				2.1	560 (14.9)	900 (24.2)	1550 (41.5)	1720 (46.0)			
60				4.1	860 (23.2)	1110 (29.7)	2480 (66.4)	2340 (62.6)			
150				10.3	1990 (53.3)	3480 (93.3)	3500 (93.8)				
2.5 psig (172 mbar)				6	0.41	140 (3.81)	190 (5.20)	260 (6.91)	450 (12.1)	590 (15.9)	680 (18.3)
10		0.69	170 (4.50)	340 (8.98)	490 (13.1)	570 (15.2)	860 (23.2)				
30		2.1	430 (11.4)	660 (17.6)	980 (26.3)	1030 (27.7)					
60		4.1	750 (20.0)	850 (22.8)	1940 (51.9)	2250 (60.2)					
150		10.3	1480 (39.8)	2320 (62.2)	3350 (89.9)						
2.5 to 4.5 psig (172 to 310 mbar)		0.3 psig (21 mbar)	2.5 psig (172 mbar)	4	0.26	130 (3.46)	180 (4.85)	190 (5.20)	310 (8.31)	370 (10.0)	480 (12.8)
				8	0.55	140 (3.81)	280 (7.61)	360 (9.67)	520 (13.8)	710 (19.0)	800 (21.4)
				12	0.82	190 (5.20)	360 (9.67)	490 (13.1)	680 (18.3)	930 (24.9)	
	30			2.1	430 (11.4)	620 (16.6)	900 (24.2)	1110 (29.7)			
	60			4.1	660 (17.6)	1010 (27.0)	1730 (46.3)	1830 (49.1)			
	150			10.3	1570 (42.2)	2060 (55.3)	4620 (124)				
	4.5 psig (310 mbar)			8	0.55	120 (3.11)	190 (5.20)	250 (6.57)	400 (10.7)	520 (13.8)	540 (14.5)
	12	0.82	160 (4.15)	210 (5.52)	320 (8.66)	530 (14.2)	720 (19.3)				
	30	2.1	300 (7.96)	460 (12.4)	760 (20.4)	830 (22.1)					
	60	4.1	590 (15.9)	810 (21.8)	1230 (32.9)	1340 (36.0)					
	150	10.3	1230 (32.9)	1640 (43.9)	3610 (96.8)						
	4.5 to 7 psig (310 to 483 mbar)	0.7 psig (48 mbar)	4.5 psig (310 mbar)	9	0.62	190 (5.20)	310 (8.31)	430 (11.4)	620 (16.6)	930 (24.9)	990 (26.6)
				12	0.83	210 (5.52)	400 (10.7)	560 (14.9)	810 (21.8)	1150 (30.8)	
				30	2.1	520 (13.8)	860 (23.2)	1100 (29.4)	1810 (48.4)		
60				4.1	860 (23.2)	1520 (40.8)	2050 (55.0)	2710 (72.6)			
150				10.3	1960 (52.6)	3480 (93.3)	5040 (135)				
7 psig (483 mbar)		9	0.62	160 (4.15)	210 (5.52)	270 (7.26)	520 (13.8)	620 (16.6)	660 (17.6)		
		12	0.83	190 (5.20)	310 (8.31)	370 (10.0)	650 (17.3)	860 (23.2)			
		30	2.1	370 (9.92)	700 (18.7)	900 (24.2)	1330 (35.6)				
		60	4.1	800 (21.4)	1290 (34.6)	1720 (46.0)	2450 (65.7)				
		150	10.3	1910 (51.2)	3350 (89.9)	4050 (109)					

- Shaded areas show where maximum operating inlet pressure for a given port diameter is exceeded.

**P600 Flow Capacities in SCFH** (Nm<sup>3</sup>/h) of 0.6 Specific Gravity Natural Gas

Outlet Pressure Range	Offset from Setpoint	Outlet Pressure Setting	Inlet Pressure		NPT 1 Body Size							
					Orifice Size, Inches (mm)							
			PSIG	BAR	1/8 (3.2)	3/16 (4.8)	1/4 (6.4)	3/8 (9.5)	1/2 (12.7)	9/16 (14.3)		
4 to 8 inches w.c. (10 to 20 mbar)	1 inch w.c. (2 mbar)	7 inches w.c. (17 mbar)	1	0.069	90 (2.42)	220 (5.87)	250 (6.57)	300 (7.96)	410 (11.1)	530 (14.2)		
			5	0.34	220 (5.87)	430 (11.4)	450 (12.1)	1140 (30.4)	1900 (50.8)	1920 (51.5)		
			8	0.55	230 (6.22)	490 (13.1)	530 (14.2)	2140 (57.4)	2360 (63.3)			
			20	1.4	520 (13.8)	970 (25.9)	1810 (48.4)	1170 (31.5) <sup>1</sup>				
			35	2.4	710 (19.0)	1480 (39.8)	2300 (61.5) <sup>1</sup>	930 (24.9) <sup>1</sup>				
			75	5.2	1030 (27.7)	1100 (29.4) <sup>1</sup>	1390 (37.3) <sup>1</sup>					
			150	10.3	1680 (44.9) <sup>1</sup>	1160 (31.1) <sup>1</sup>						
7 to 16 inches w.c. (17 to 40 mbar)	1 inch w.c. (2 mbar)	11 inches w.c. (27 mbar)	1	0.069	90 (2.42)	160 (4.15)	170 (4.50)	210 (5.52)	230 (6.22)	250 (6.57)		
			5	0.34	160 (4.15)	300 (7.96)	310 (8.31)	520 (13.8)	620 (16.6)	1160 (31.1)		
			8	0.55	170 (4.50)	360 (9.67)	430 (11.4)	1160 (31.1)	1460 (39.1)			
			20	1.4	350 (9.33)	580 (15.6)	780 (20.7)	1630 (43.6)				
			35	2.4	560 (14.9)	1030 (27.7)	2840 (37.5)	1190 (31.8) <sup>1</sup>				
			75	5.2	1230 (32.9)	1290 (34.6)	1510 (40.4) <sup>1</sup>					
			150	10.3	1740 (46.7)	1240 (33.2) <sup>1</sup>						
15 inches w.c. to 1.2 psig (37 to 83 mbar)	5-1/2 inches w.c. (14 mbar)	15 inches w.c. (37 mbar)	2	0.14	90 (2.42)	460 (12.3)	500 (13.4)	1100 (29.5)	1160 (31.1)	1330 (34.8)		
			6	0.41	250 (6.70)	750 (20.1)	930 (24.9)	2500 (67.0)	2800 (75.0)			
			10	0.69	340 (9.11)	920 (24.7)	1590 (42.6)	3250 (87.1)				
			30	2.1	680 (18.2)	1560 (41.8)	2830 (75.8)	5460 (146)				
			60	4.1	1160 (31.1)	2550 (68.3)	4620 (124)					
			150	10.3	2570 (2.42)	2770 (74.2)						
		1.2 psig (83 mbar)	2	0.14	90 (2.42)	400 (10.7)	460 (12.3)	820 (22.0)	840 (22.5)	900 (24.1)		
	6	0.41	250 (6.57)	630 (16.9)	700 (18.8)	1550 (41.5)	1610 (43.1)					
	10	0.69	320 (8.58)	860 (23.0)	1020 (27.3)	2320 (62.2)						
	30	2.1	670 (18.0)	1540 (41.3)	2550 (68.3)	4390 (118)						
	60	4.1	1140 (30.6)	2550 (68.3)	4190 (112)							
	150	10.3	2570 (68.9)	3100 (83.1)								
	1.2 to 2.5 psig (83 to 172 mbar)	0.2 psig (14 mbar)	1.2 psig (83 mbar)	2	0.14	120 (3.11)	210 (5.52)	230 (6.22)	360 (9.65)	620 (16.6)	660 (17.6)	
				6	0.41	180 (4.85)	340 (8.98)	450 (12.1)	750 (20.1)	8810 (23.5)	1080 (29.1)	
10				0.69	190 (5.20)	560 (14.9)	650 (17.3)	1150 (30.8)	1750 (47.0)			
30				2.1	630 (16.9)	1230 (32.9)	1600 (42.9)	1910 (51.2)				
60				4.1	1010 (27.0)	2450 (65.7)	3600 (96.5)	2420 (64.9)				
150				10.3	2440 (65.3)	3480 (93.3)	3870 (104)					
2.5 psig (172 mbar)				6	0.41	140 (3.81)	260 (6.91)	270 (7.26)	500 (13.4)	670 (18.0)	680 (18.3)	
10			0.69	180 (4.85)	450 (12.1)	490 (13.1)	710 (19.0)	860 (23.2)				
30			2.1	570 (15.2)	720 (19.3)	1030 (27.7)	1640 (44.0)					
60			4.1	850 (22.8)	1830 (49.1)	2520 (67.4)	3130 (83.9)					
150			10.3	2190 (58.8)	3350 (89.9)	3480 (93.3)						
2.5 to 4.5 psig (172 to 310 mbar)			0.3 psig (21 mbar)	2.5 psig (172 mbar)	4	0.26	140 (3.81)	180 (4.85)	190 (5.20)	410 (11.1)	430 (11.4)	480 (12.8)
					8	0.55	180 (4.85)	320 (8.66)	360 (9.67)	710 (19.0)	740 (19.7)	900 (24.2)
					12	0.82	190 (5.20)	400 (10.7)	490 (13.1)	930 (24.9)	960 (25.6)	
	30	2.1			430 (11.4)	620 (16.6)	900 (24.2)	1830 (49.1)				
	60	4.1			660 (17.6)	1610 (43.2)	1740 (46.7)	2970 (79.6)				
	150	10.3			2010 (53.9)	4090 (110)	6660 (178)					
	4.5 psig (310 mbar)	8			0.55	120 (3.11)	190 (5.20)	250 (6.57)	490 (13.1)	520 (13.8)	540 (14.5)	
	12	0.82		160 (4.15)	210 (5.52)	320 (8.66)	610 (16.2)	850 (22.8)				
	30	2.1		390 (10.4)	520 (13.8)	760 (20.4)	1360 (36.3)					
	60	4.1		630 (16.9)	840 (22.5)	1230 (32.9)	2580 (69.1)					
	150	10.3		1390 (37.3)	2880 (77.1)	4990 (134)						
	4.5 to 7 psig (310 to 483 mbar)	0.7 psig (48 mbar)		4.5 psig (310 mbar)	9	0.62	210 (5.52)	310 (8.31)	430 (11.4)	770 (20.6)	970 (25.9)	1050 (28.0)
					12	0.83	230 (6.22)	400 (10.7)	560 (14.9)	1010 (27.0)	1290 (34.6)	
					30	2.1	520 (13.8)	860 (23.2)	1100 (29.4)	2080 (55.7)		
60			4.1		880 (23.5)	1520 (40.8)	2050 (55.0)	3650 (97.8)				
150			10.3		2060 (55.3)	3510 (94.0)	6000 (161)					
7 psig (483 mbar)			9	0.62	160 (4.15)	210 (5.52)	270 (7.26)	590 (15.9)	620 (16.6)	660 (17.6)		
			12	0.83	210 (5.52)	310 (8.31)	370 (10.0)	770 (20.7)	890 (23.6)			
			30	2.1	370 (10.0)	700 (18.7)	900 (24.2)	1650 (44.2)				
			60	4.1	800 (21.4)	1290 (34.6)	1720 (46.0)	2760 (74.0)				
			150	10.3	2010 (53.9)	3390 (90.9)	4140 (111)					

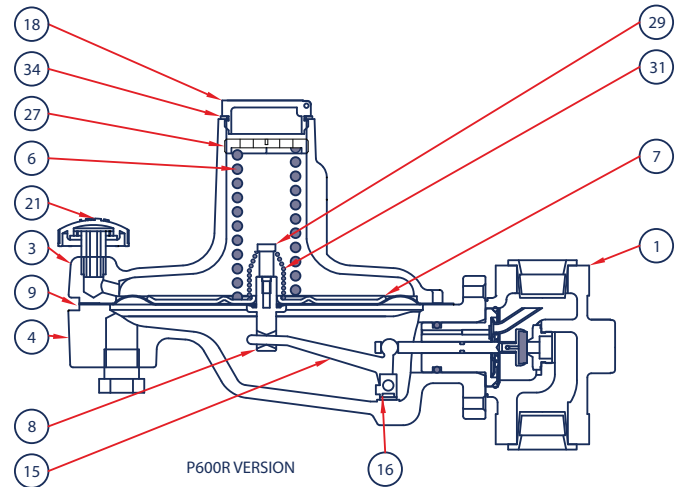
1. Limited due to boost

Shaded areas show where maximum operating inlet pressure for a given port diameter is exceeded.

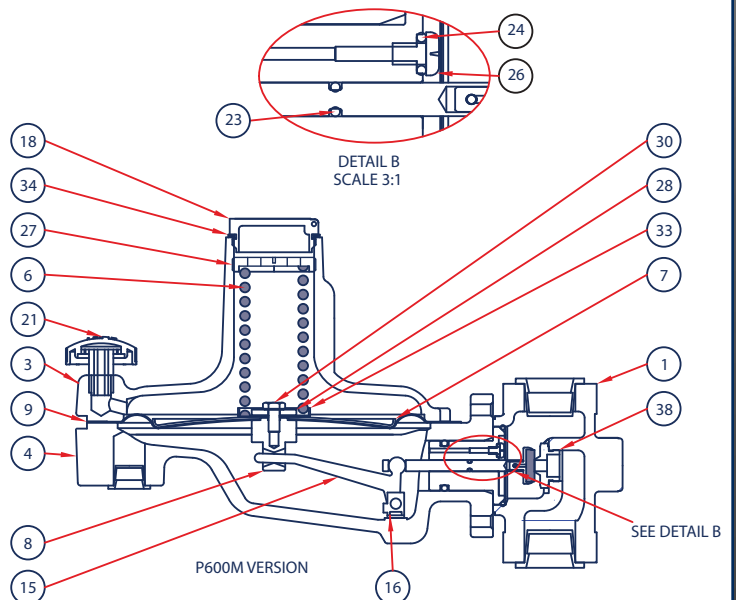
## P600 Parts List

Item	Description	Qty.	Part Number
1	3/4" Iron	1	664-318-000
	1" NPT - Iron		664-318-001
2	Body Bolts - Plated Steel	2	648-466-006
3	Bonnet - Iron	1	604-559-000
4	Lower Casing - Iron	1	629-232-000
5	Orifices	1	
	1/8" Aluminum		688-013-004
	3/16" Aluminum		688-013-003
	1/4" Aluminum		688-013-002
	3/8" Aluminum		688-013-001
	1/2" Aluminum		688-013-000
	9/16" Aluminum		688-018-001
6	Range Springs	1	
	4" - 8" WC - Red, Plated Steel		655-732-000
	7" - 16" WC - Olive Drab, Plated Steel		655-732-001
	15" WC - 1.2 psig - Yellow, Plated Steel		655-732-002
	1.2 psig - 2.5 psig - Light Green, Plated Steel		655-732-003
	2.5 psig - 4.5 psig - Light Blue, Plated Steel		655-732-004
7	Diaphragm Heads	1	
	Diaphragm Head - O & M Versions		628-281-000
8	Diaphragm Head - R Version Only	1	628-281-001
	Pusher Post		
	Pusher Post - O & M Versions		637-329-000
9	Pusher Post - R Version	1	637-329-001
	Diaphragms		
10	Diaphragm - Nitrile - O & M Versions	1	618-095-000
	Diaphragm - Nitrile - R Version Only		618-095-001
11	Diaphragm - Nitrile - R Version Only	1	618-095-001
12	Body O-ring	1	649-309-001
13	Insert O-Ring - Nitrile	1	649-309-002
14	Seat Assembly - Nitrile	1	822-023-002
15	Seat Stem - Anodized Aluminum	1	689-008-000
16	Cotter Pin (Not Shown)	1	635-000-004
17	Lever Assembly - Plated Steel	1	827-014-000
18	Lever Screw - Plated Steel	2	648-000-383
19	Seat Assembly Guide Insert - Aluminum	1	626-108-000
20	Bonnet Cap - Plastic	1	610-056-000
21	Build Screw Nuts - Plated Steel	8	634-000-038
22	Build Screws - Plated Steel	8	648-000-030
23	Vent Assembly - Spring Case Up (Standard)	1	836-009-000
24	Vent Assembly - Spring Case Down	1	836-008-000
25	Seat Stem O-ring - M Version Only	1	649-000-001
26	Throat Seal O-ring - M Version Only	1	649-000-193
27	Pilot Tube Assembly - O & R Versions	1	818-006-000
28	Insert Screws	4	
	O & R Version		648-000-383
29	M Version	1	648-000-389
30	Adjustment Screw	1	648-499-000
31	Lower spring Washer - O & M Versions	1	662-236-001
32	Spring Holder - R Version Only	1	648-537-000
33	Diaphragm Cap Screw - O & M Versions	1	648-466-007
34	Relief Valve Spring - R Version Only	1	655-732-006
35	Back-up Ring	1	662-236-000
36	Lower Spring Seat - O & M Versions	1	643-197-001
37	Cap Gasket - Neoprene	1	624-069-000

### P600 R



### P600 M



# P600 Parts Drawing

## P600

