

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 a non-relieving option, 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
WC or PSIG	BAR		
4 - 8" WC	.01 to .02	Red	655-732-000
7 - 16" WC	.017 to .04	Olive	655-732-001
15" WC 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

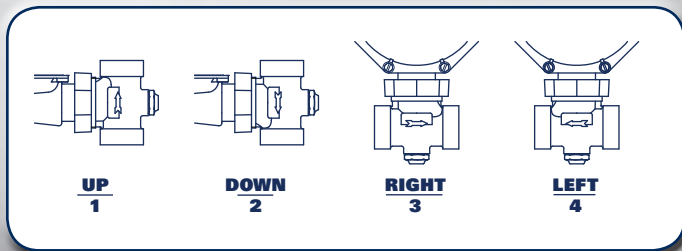
	Kit Includes	Part Number
O & M Version	Diaphragm, body O-ring, insert O-ring, seat assembly, cotter pin, seat stem O-ring, throat seal O-ring	971-600-000
R Version	Diaphragm, body O-ring, insert O-ring, seat assembly, cotter pin	971-600-001

P600 Internal Relief Discharge

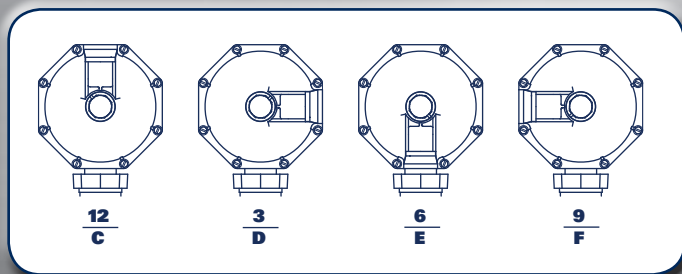
Spring Range with Spring Case Upward	Internal Relief Start-to-Discharge. Pressure Above Set Pressure
4 to 8 inches WC (10 to 20 mbar)	10 to 24 inches WC (25 to 60 mbar)
7 to 16 inches WC (17 to 40 mbar)	10 to 26 inches WC (25 to 65 mbar)
15 inches WC to 1.2 PSIG (37 to 83 mbar)	10 to 26 inches WC (25 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.)

P600 Body Positions



P600 Vent Positions

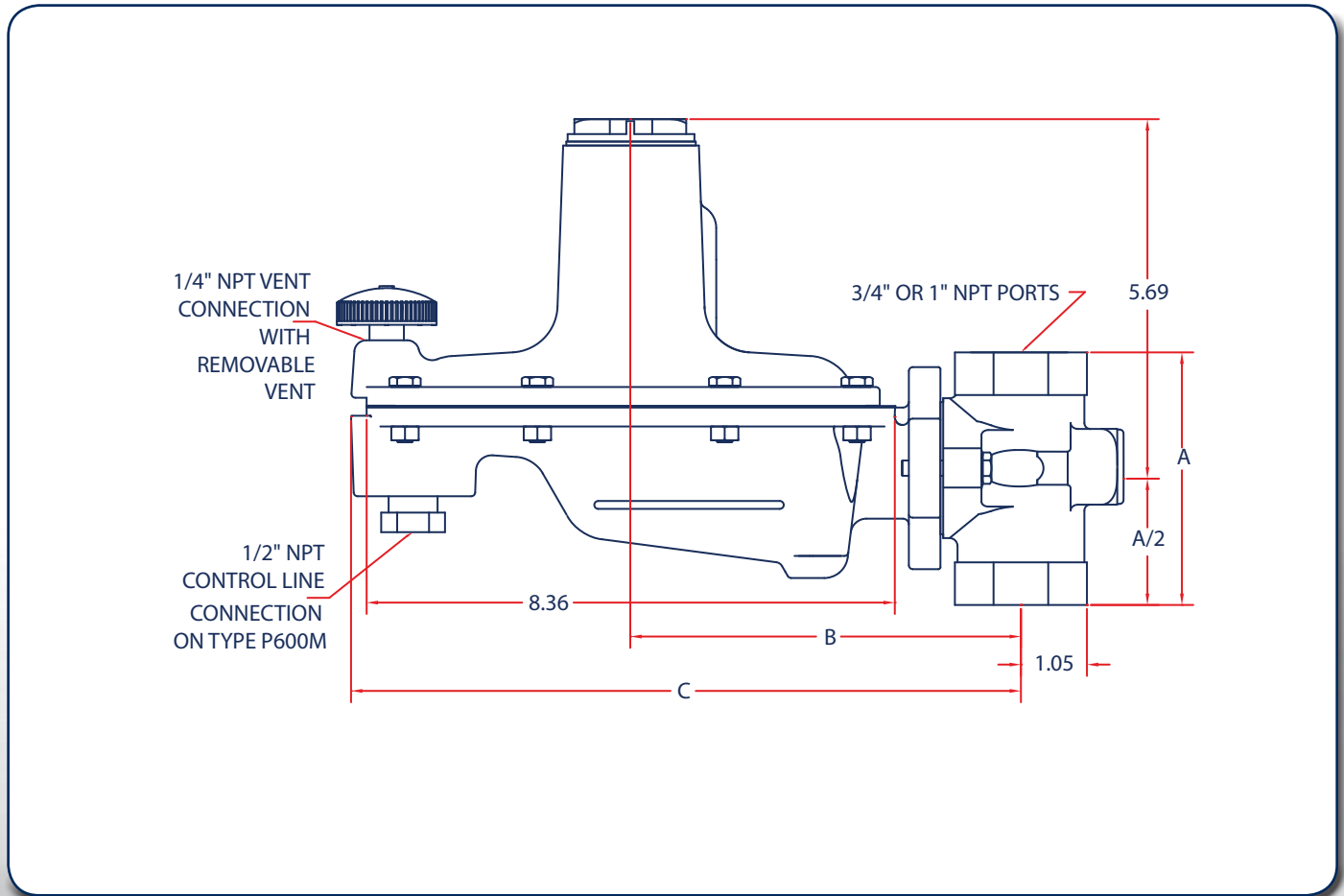


P600 Part Matrix

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							1.2 - 2.5 PSIG
	004							2.5 - 4.5 PSIG
	007							4.5 - 7 PSIG
								Options
	0							None
	M							Monitor Version
	R							Relieving Version
								Vent Assembly
	0							Up
	1							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 Dimensions

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



P600 Flow Capacities in SCFH (Nm³/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 WC (10 to 20 mbar)	1 inch WC (2 mbar)	7 inches WC (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 WC (17 to 40 mbar)	1 inch WC (2 mbar)	11 inches WC (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 WC to 1.2 PSIG (37 to 83 mbar)	5-1/2 inches WC (14 mbar)	15 inches WC (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)							
			2	0.14	90 (2.42)	260 (6.91)	410 (11.1)	600 (16.2)	810 (21.8)	700 (18.7)			
	1.2 PSIG (83 mbar)	1.2 PSIG (83 mbar)	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)						
6	0.41	140 (3.81)				190 (5.20)	260 (6.91)	450 (12.1)	590 (15.9)	680 (18.3)			
2.5 PSIG (172 mbar)	2.5 PSIG (172 mbar)	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)						
8	0.55		120 (3.11)			190 (5.20)	250 (6.57)	400 (10.7)	520 (13.8)	540 (14.5)			
4.5 PSIG (310 mbar)	4.5 PSIG (310 mbar)		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)						
9	0.62	160 (4.15)				210 (5.52)	270 (7.26)	520 (13.8)	620 (16.6)	660 (17.6)			
7 PSIG (483 mbar)	7 PSIG (483 mbar)	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 (Nm³/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 WC (10 to 20 mbar)	1 inch WC (2 mbar)	7 inches WC (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) ¹			
			35	2.4	710 (19.0)	1480 (39.8)	2300 (61.5) ¹	930 (24.9) ¹			
			75	5.2	1030 (27.7)	1100 (29.4) ¹	1390 (37.3) ¹				
			150	10.3	1680 (44.9) ¹	1160 (31.1) ¹					
7 to 16 inches WC (17 to 40 mbar)	1 inch WC (2 mbar)	11 inches WC (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) ¹			
			75	5.2	1230 (32.9)	1290 (34.6)	1510 (40.4) ¹				
			150	10.3	1740 (46.7)	1240 (33.2) ¹					
15 inches WC to 1.2 PSIG (37 to 83 mbar)	5-1/2 inches WC (14 mbar)	15 inches WC (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)					
			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)				
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)				
	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)					

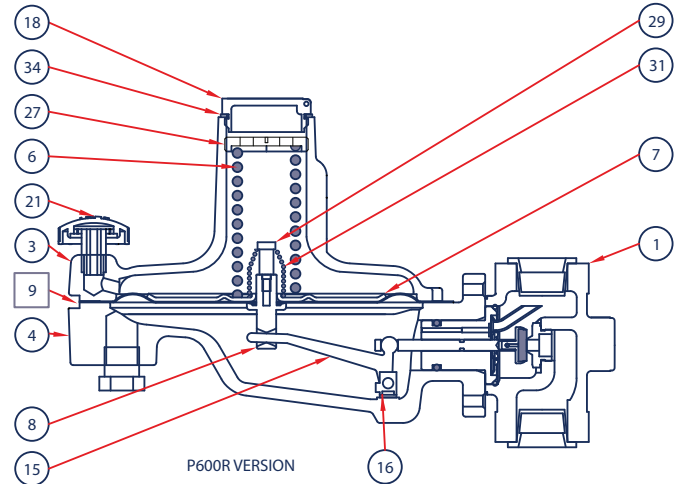
1. Limited due to boost

- 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
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 - Stainless Steel		628-281-000
8	Diaphragm Head - R Version Only - Plated Steel	1	628-281-001
	Pusher Post		
9	Pusher Post - O & M Versions - Aluminum	1	637-329-000
	Pusher Post - R Version - Zamak		637-329-001
10	Diaphragms	1	
	Diaphragm - Nitrile - O & M Versions		618-095-000
11	Diaphragm - Nitrile - R Version Only	1	618-095-001
	Body O-ring - Nitrile		649-309-001
12	Insert O-Ring - Nitrile	1	649-309-002
13	Seat Assembly - Nitrile	1	822-023-002
14	Seat Stem - Anodized Aluminum	1	689-008-000
15	Cotter Pin (Not Shown) - Stainless Steel	1	635-000-004
16	Lever Assembly - Plated Steel	1	827-014-000
17	Lever Screw - Plated Steel	2	648-000-383
18	Seat Assembly Guide Insert - Aluminum	1	626-108-000
19	Bonnet Cap - Plastic	1	610-056-000
20	Build Screw Nuts - Plated Steel	8	634-000-038
21	Build Screws - Plated Steel	8	648-000-030
22	Vent Assembly - Spring Case Up (Standard) - Plastic	1	836-009-000
	Vent Assembly - Spring Case Down - Plastic		836-008-000
23	Seat Stem O-ring - M Version Only - Nitrile	1	649-000-001
24	Throat Seal O-ring - M Version Only - Nitrile	1	649-000-193
25	Pilot Tube Assembly - O & R Versions - Stainless Steel	1	818-006-000
26	Insert Screws	4	
	O & R Version - Stainless Steel		648-000-383
27	M Version - Plated Steel	1	648-000-389
	Adjustment Screw - Zinc		648-499-000
28	Lower spring Washer - O & M Versions - Plated Steel	1	662-236-001
29	Spring Holder - R Version Only - Plated Steel	1	648-537-000
30	Diaphragm Cap Screw - O & M Versions - Plated Steel	1	648-466-007
31	Relief Valve Spring - R Version Only - Stainless Steel	1	655-732-006
32	Back-up Ring - Stainless Steel	1	662-236-000
33	Lower Spring Seat - O & M Versions - Plated Steel	1	643-197-001
34	Cap Gasket - Neoprene	1	624-069-000

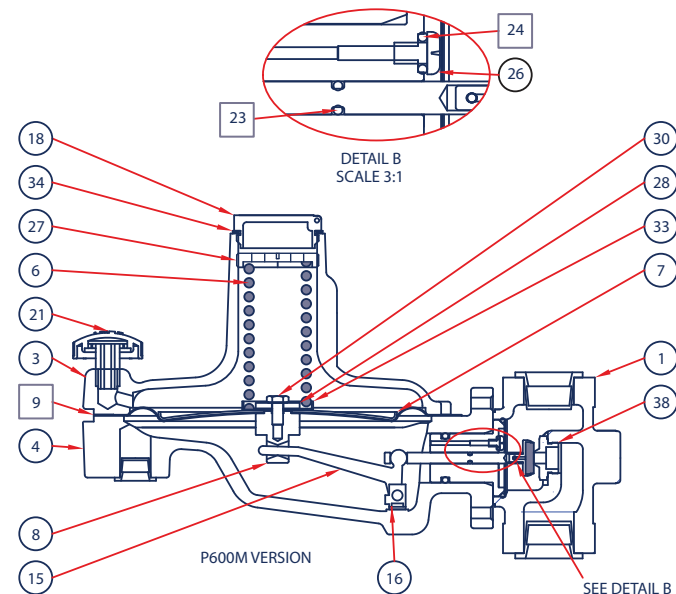
P600 R



P600R VERSION

□ Parts included in P600 R Repair Kit, 971-600-001

P600 M

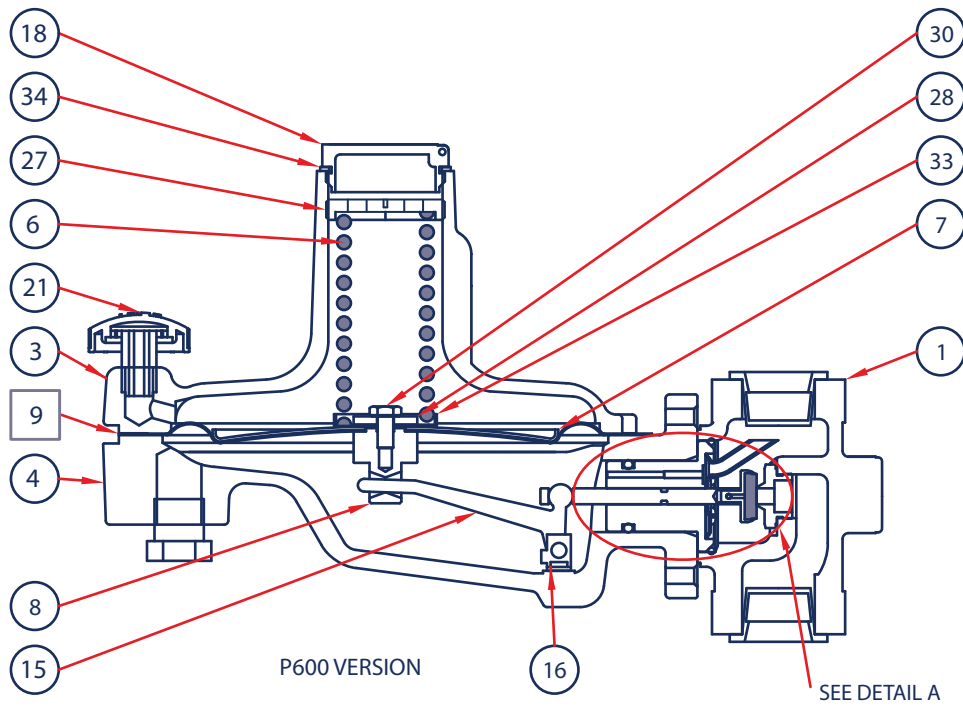


P600M VERSION

SEE DETAIL B

□ Parts included in P600 O and M Repair Kit, 971-600-000

P600



Parts included in P600 O and M Repair Kit, 971-600-000

