

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

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 Part Matrix

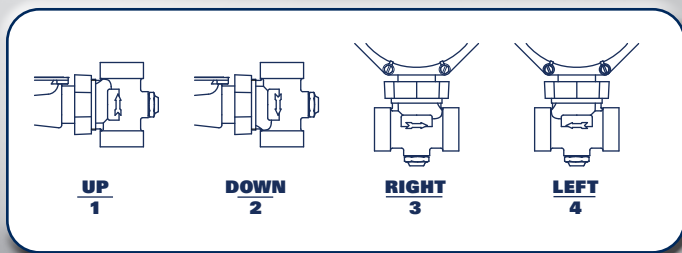
P600								0
	↑	↑	↑	↑	↑	↑	↑	Body
	06							3/4 NPT
	08							1 NPT
								Spring Range
	008							4-8 WC
	016							7-16 WC
	001							15 WC - 1.2 PSIG
	002							1.2 - 2.5 PSIG
	004							2.5 - 4.5 PSIG
	007							4.5 - 7 PSIG
								Options
	0							None
	M							Monitor Version
	R							Relieving 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 Internal Relief Discharge

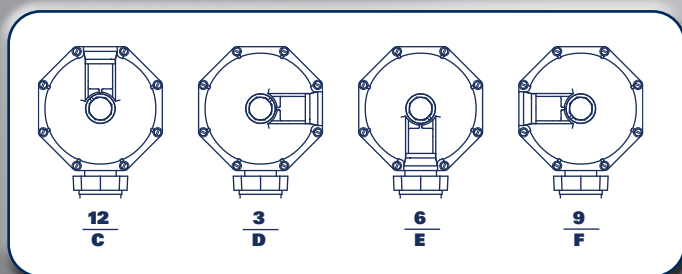
Spring Range with Spring Case Upward	Internal Relief Start-to-Discharge Pressure Above Set Pressure
4 to 8 inches WC (10 to 20 mbar)	10 to 24 inches WC (25 to 60 mbar)
7 to 16 inches WC (17 to 40 mbar)	10 to 26 inches WC (25 to 65 mbar)
15 inches WC to 1.2 PSIG (37 to 83 mbar)	10 to 26 inches WC (25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

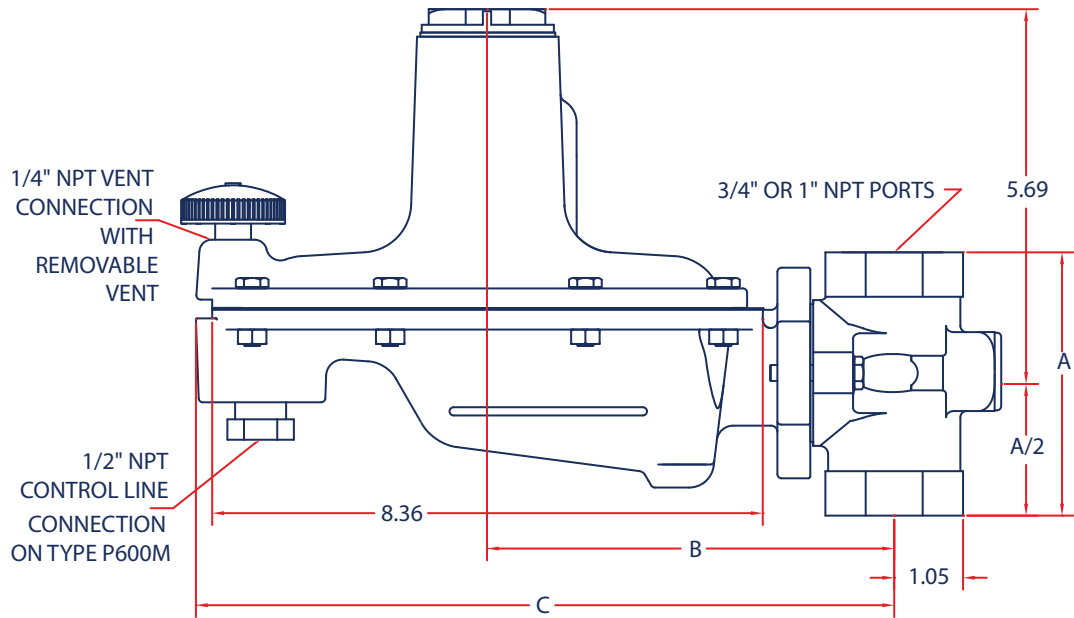


P600 Vent Positions



P600 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)	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)	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)		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)	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)					
			150	10.3	2570 (68.9)	3100 (83.1)					
	1.2 PSIG (83 mbar)	1.2 PSIG (83 mbar)	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)				
				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)				
			150	10.3	2440 (65.3)	3480 (93.3)	3870 (104)				
	2.5 PSIG (172 mbar)	2.5 PSIG (172 mbar)	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)			
				150	10.3	2190 (58.8)	3350 (89.9)	3480 (93.3)			
				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)				
			150	10.3	2010 (53.9)	4090 (110)	6660 (178)				
	4.5 PSIG (310 mbar)	4.5 PSIG (310 mbar)	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)			
				150	10.3	1390 (37.3)	2880 (77.1)	4990 (134)			
				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)	7 PSIG (483 mbar)	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)			

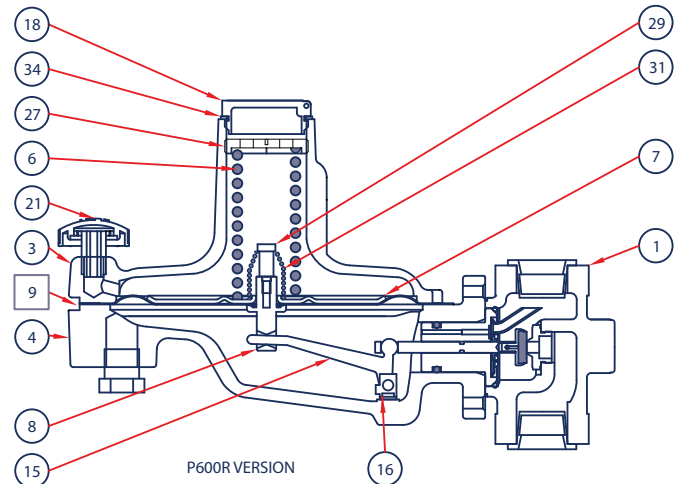
1. Limited due to boost

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

P600 Parts List

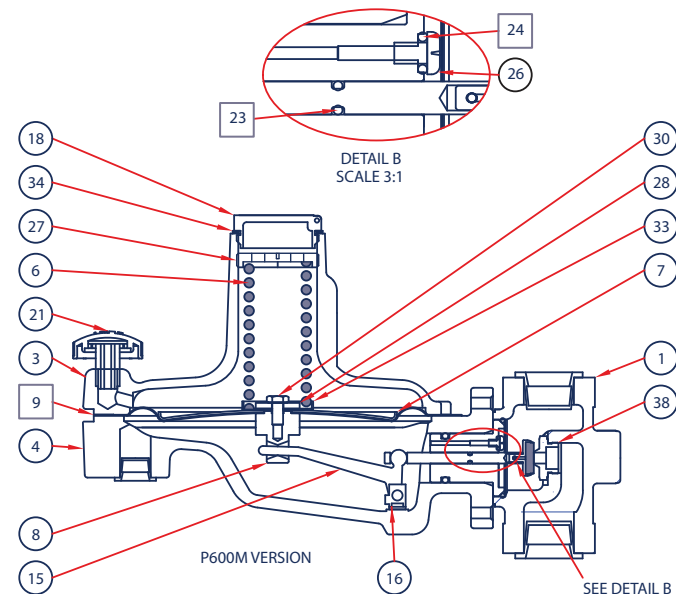
Item	Description	Part Number
1	3/4" Iron	664-318-000
	1" NPT - Iron	664-318-001
2	Body Bolts - Plated Steel	648-466-006
3	Bonnet - Iron	604-559-000
4	Lower Casing - Iron	629-232-000
5	Orifices	
	1/8" Aluminum	688-013-004
	3/16" Aluminum	688-013-003
	1/4" Aluminum	688-013-002
	3/8" Aluminum	688-013-001
	1/2" Aluminum	688-013-000
6	Range Springs	
	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	
	Diaphragm Head - O & M Versions - Stainless Steel	628-281-000
	Diaphragm Head - R Version Only - Plated Steel	628-281-001
	Pusher Post	
	Pusher Post - O & M Versions - Aluminum	637-329-000
8	Pusher Post - R Version - Zamak	637-329-001
	Diaphragms	
9	Diaphragm - Nitrile - O & M Versions	618-095-000
	Diaphragm - Nitrile - R Version Only	618-095-001
10	Body O-ring - Nitrile	649-309-001
11	Insert O-Ring - Nitrile	649-309-002
12	Seat Assembly - Nitrile	822-023-002
13	Seat Stem - Anodized Aluminum	689-008-000
14	Cotter Pin (Not Shown) - Stainless Steel	635-000-004
15	Lever Assembly - Plated Steel	827-014-000
16	Lever Screw - Plated Steel	648-000-383
17	Seat Assembly Guide Insert - Aluminum	626-108-000
18	Bonnet Cap - Plastic	610-056-000
19	Build Screw Nuts - Plated Steel	634-000-038
20	Build Screws - Plated Steel	648-000-030

P600 R



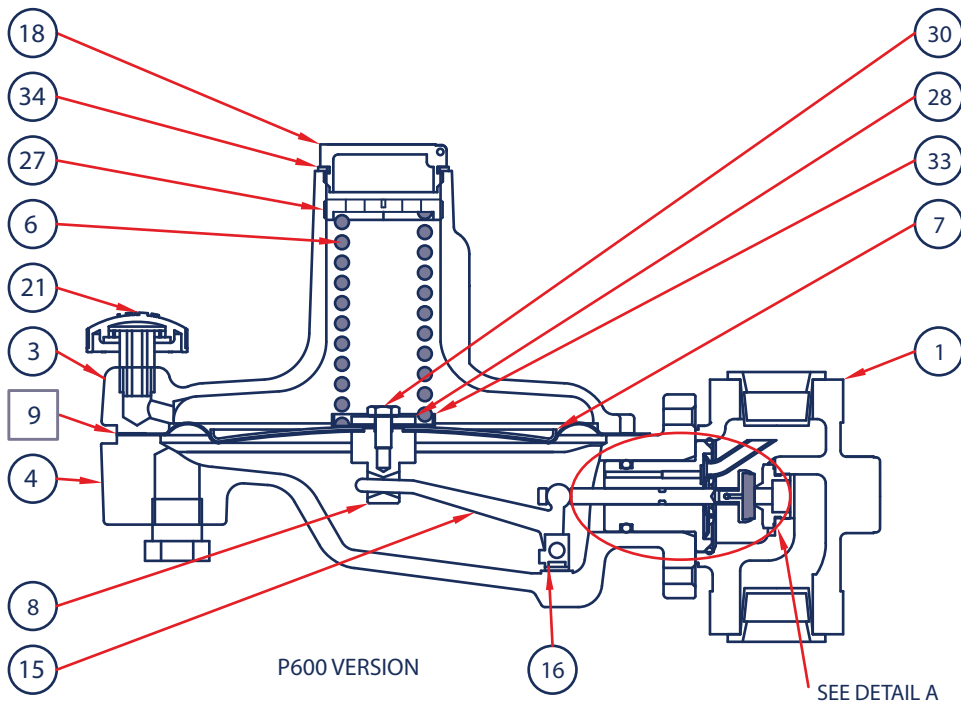
□ Parts included in P600 R Repair Kit, 971-600-001

P600 M



□ 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

