

P98H Back Pressure Regulator / Relief Valve

The P98H monitors upstream pressure and opens to relieve excess pressure increases above setpoint. As a Back Pressure Regulator, the upstream pressure is monitored and released downstream when the setpoint is exceeded.

Applications

- Pulp and Paper - Boilers, Heaters, PM Drums
- Chemical Boilers, Process Heaters
- Water and Waste Water Systems
- Steam Injection



P98H Part Matrix

P98H				0	0					
										Body Size
	06									3/4 NPT
	08									1 NPT
										Spring Range
										PSIG BAR
	035									15 - 35 1 - 2.4
	075									25 - 75 1.7 - 5.2
	140									70 - 140 4.8 - 9.7
	200									130 - 200 9 - 13.8
										Options
										None
										1 Tapped Vent Bonnet
										A 150 RF Steel Body Only
										B 300 RF Steel Body Only
										C 600 RF Steel Body Only
										D Socket Weld Steel Body Only
										Valve Plug / Orifice Material
										A 416 SS (Metal / Metal)
										E 416 SS / Nitrile
										Diaphragm Material
										0 302 SS
										3 Neoprene
										Case / Body Material
										0 Iron / Iron
										1 Steel / Steel
										3 Iron / Steel

Specifications

Maximum Inlet Pressure (Set Pressure Plus Build Up)		
Seat	300 PSIG	Steel
	250 PSIG	Ductile iron
	300 PSIG	Aluminum/steel
	250 PSIG	All units
Pressure Ranges	15-35 PSIG	
	25-75 PSIG	
	70-140 PSIG	
	130-200 PSIG	
Body Size	3/4 NPT	
	1 NPT	
Orifice Size	9/16"	
450 °F Max* - 300 PSIG	Steel Body	Cast Iron Body
	Up to 315 °F* - 300 PSIG	
	Up to 406 °F* - 250 PSIG	
*Trim Materials will limit maximum operating temperatures		
Temperature Range Limits		
Nitrile Components	-20 °F to +200 °F	
Metal (SS) Diaphragm and Metal-Metal Seat		
Cast Iron Body and Spring Case		
Weight Approximate		
3/4"	20 lb	9.1 kg
1"	20 lb	9.1 kg

Spring Range

Body Size	PSIG	BAR	Spring Color Code
3/4 and 1 NPT (20 and 25 DN)	15 - 35	1.03 - 2.41	Yellow
	25 - 75	1.72 - 5.17	Green
	70 - 140	4.83 - 9.65	Red
	130 - 200	8.96 - 13.8	Blue

P98H Regulator Rebuild Kits

	Kit Includes	Part Number
P98H	302SS Diaphragms (2), Diaphragm Gasket, Thru hole Gasket, 416SS Orifice, 416SS/Nitrile Valve Plug, Seat O-ring Retainer & O-ring, Seat Machine Screw	971-P98-000
	302SS Diaphragms (2), Diaphragm Gasket, Thru hole Gasket, 416SS Orifice, 416SS / Metal to Metal Valve Plug	971-P98-001
	Neoprene Diaphragm, 416SS Orifice, 416SS/Nitrile Valve Plug, Thru Hole Gasket, Seat O-ring Retainer & O-ring, Seat Machine Screw	971-P98-002
	Neoprene Diaphragm, 416SS Orifice, 416SS / Metal to Metal Valve Plug, Thru Hole Gasket,	971-P98-003

Materials of Construction

Body, Bonnet, Diaphragm Case	
Options	Cast Iron
	Steel
Diaphragm	
Options	302 SS
	Neoprene
Valve Plug / Seat	
Options	Nitrile Valve Plug / SS Orifice
	Metal Valve Plug / SS Orifice

P98H Dimension, Inches

Nominal Body Size, Inches	A		B	C (Maximum)	D	E (NPT)
	NPT or SWE	Flanged				
3/4, 1	5.0	14.0	1.31	9.69	6.22	1/2*

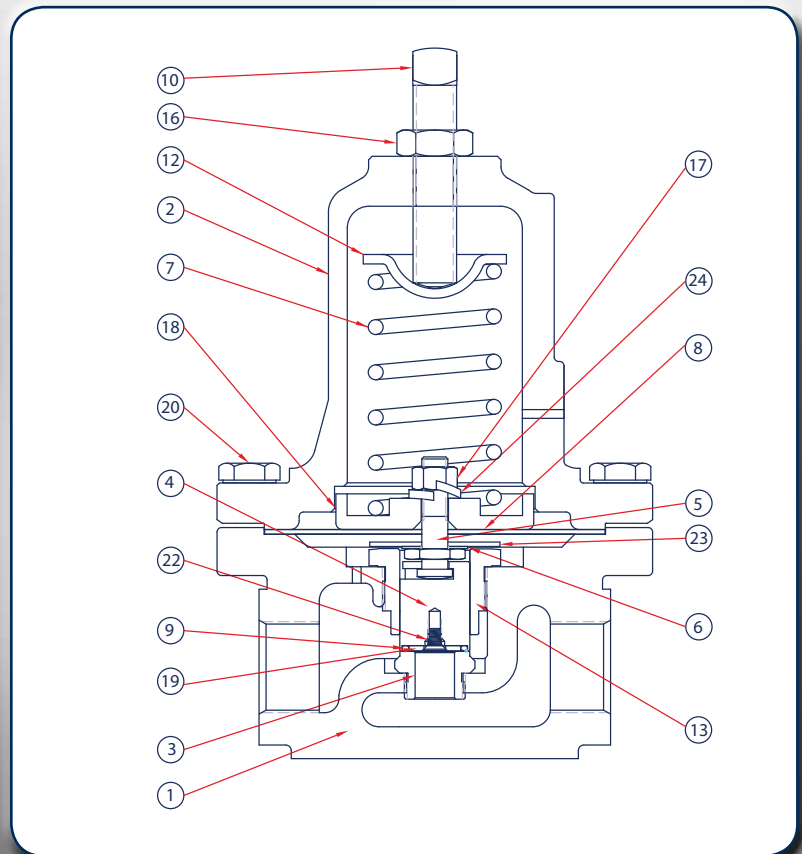
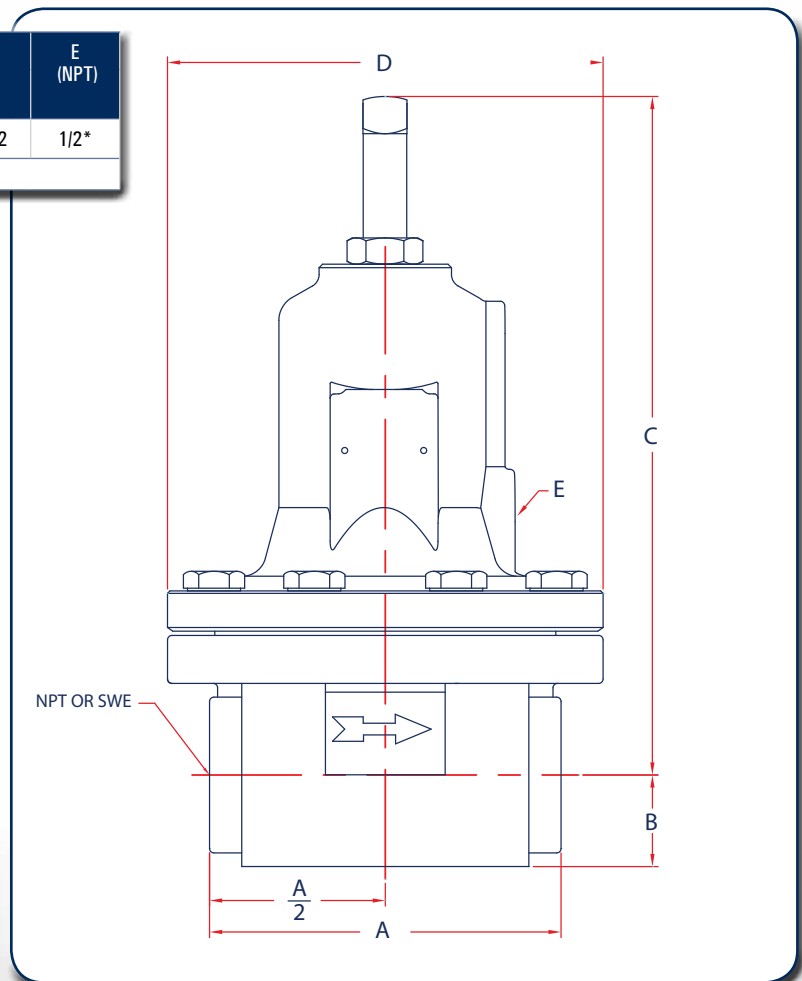
* Tapped Vent Option Only

Installation

These valves may be installed in any position, as long as flow will be in the same direction as that of the arrow cast on the body.

P98H Parts

Item		Description	Part Number
1	Body	Iron 3/4"	664-336-000
		Iron 1"	664-336-001
		Steel 3/4"	664-337-000
		Steel 1"	664-337-001
2	Bonnet	Steel drilled	604-241-000
		Iron drilled	604-242-000
3	Orifice	416 Stainless Steel/ Metal to Metal	688-020-000
		416 Stainless Steel w/Elastomer	688-027-000
4	Valve Plugs	416 Stainless Steel w/Elastomer	639-112-000
		416 Stainless Steel/ Metal to Metal	639-116-000
5	Pusher Post, 416 SS Elastomer		613-034-000
	Pusher Post, 416 SS Metal to Metal		613-036-000
6	Diaphragm Assembly Gasket		624-074-000
7	Range Springs	15-35 PSIG, Yellow	655-712-000
		25-75 PSIG, Green	655-712-001
		70-140 PSIG, Red	655-712-002
		130-200 PSIG, Blue	655-717-000
8	Diaphragm	Neoprene	618-083-000
		302 Stainless Steel (2)	618-085-000
9	O-ring (Nitrile) (Composite Seat Only)		649-269-004
10	Adjusting Screw		648-519-000
11	Diaphragm Flange Gasket (Metal to Metal units only)		624-072-000
12	Spring Guide		626-100-000
13	Valve Plug Guide, 416 SS		626-103-000
14	NACE Tag (Not Shown)		632-503-000
15	Nameplate (Not Shown)		632-524-000
16	Stem Jam Nut		634-181-000
17	Diaphragm Assembly Locknut		634-184-000
18	Piston (Diaphragm Head)		637-324-000
19	Retainer, O-ring (416SS) (Composite Seat Only)		643-199-000
20	Steel Build Screw (8 Required)		648-463-002
21	Drive Screw (Nameplate) (2 Required)		648-464-000
22	Valve Plug Machine Screw (SS) (Composite Seat Only)		648-522-000
23	Washer, 416 SS (Composite Seat Only)		662-220-000
24	Lockwasher (Split Ring)		662-221-000



P98H Water Relief Capacities in Gallons per Minute (l/min) with Neoprene Diaphragm

Nominal Body Size, Inches (DN)	Spring		Relief Pressure Setting PSIG (BAR)	Flow at Relief Setting, GPM (l/min.)	Press Buildup Over Relief Setting, PSIG (BAR)								
	Part Number	Color Code			5 (0.34)	7 (0.48)	10 (0.69)	15 (1.03)	20 (1.38)	30 (2.07)	50 (3.45)	75 (5.17)	100 (6.90)
3/4, 1 (20, 25)	655-712-000	Yellow	15 (1.03)	1.8 (6.81)	18 (68.1)	23.5 (88.9)	27 (102)	31 (117)	33 (125)	37 (140)	45 (170)	53 (201)	59 (223)
			25 (1.72)	1.8 (6.81)	26 (98.4)	29 (110)	33 (125)	38 (144)	41 (155)	45 (170)	53 (201)	61 (231)	67 (254)
			35 (2.41)	1.8 (6.81)	32 (121)	34.5 (131)	37.5 (142)	42 (159)	45 (170)	49.5 (187)	56 (212)	64 (242)	70 (265)
	655-712-001	Green	35 (2.41)	1.5 (5.68)	20 (75.7)	25 (94.6)	28 (106)	33 (125)	37 (140)	44 (167)	50 (189)	57 (216)	63 (238)
			50 (3.45)	1.5 (5.68)	25 (94.6)	31 (117)	37 (140)	42.5 (161)	47 (178)	52 (197)	58 (220)	65 (246)	71.0 (269)
			75 (5.17)	1.5 (5.68)	35 (132)	41 (155)	45 (170)	50 (189)	53 (201)	58 (220)	63.5 (240)	68.5 (259)	74 (280)
	655-712-002	Red	75 (5.17)	1.3 (4.92)	19 (71.9)	25 (94.6)	32 (121)	37 (140)	41 (155)	47 (178)	57 (216)	66.5 (252)	72 (273)
			100 (6.90)	1.3 (4.92)	22 (83.3)	29 (110)	35 (132)	43 (163)	48.5 (184)	57 (216)	66.5 (252)	73 (276)	78 (295)
			125 (8.62)	1.3 (4.92)	27 (102)	34.5 (131)	42 (159)	50.5 (191)	57 (216)	67 (254)	73.5 (278)	78 (295)	83 (314)
	655-717-000	Blue	150 (10.34)	1 (3.78)	15 (56.8)	20 (75.7)	27 (102)	39 (148)	48 (182)	62 (235)	78 (295)	83 (314)	88 (333)
			175 (12.07)	1 (3.78)	19 (71.9)	24 (90.8)	32 (121)	50 (189)	60 (227)	72 (273)	82 (310)	88.5 (335)	94 (356)
			200 (13.79)	1 (3.78)	22 (83.3)	27 (102)	36 (136)	53 (201)	65 (246)	78 (295)	88 (333)	93 (352)	98 (371)

P98H Water Relief Capacities in Gallons per Minute (l/min) with Metal Diaphragm

Nominal Body Size, Inches (DN)	Spring		Relief Pressure Setting PSIG (BAR)	Flow at Relief Setting, GPM (l/min.)	Press Buildup Over Relief Setting, PSIG (BAR)								
	Part Number	Color Code			5 (0.34)	7 (0.48)	10 (0.69)	15 (1.03)	20 (1.38)	30 (2.07)	50 (3.45)	75 (5.17)	100 (6.90)
3/4, 1 (20, 25)	655-712-000	Yellow	15 (1.03)	1.8 (6.81)	6 (22.7)	13 (49.2)	16 (60.6)	20 (75.7)	26 (98.4)	31 (117)	37 (140)	44 (167)	49 (185)
			25 (1.72)	1.8 (6.81)	13 (49.2)	16 (60.6)	19.5 (73.8)	24 (90.8)	32 (121)	35 (132)	40 (151)	46 (174)	50 (189)
			35 (2.41)	1.8 (6.81)	16 (60.9)	19 (71.9)	23 (87.1)	28 (106)	33 (125)	37 (140)	41 (155)	47 (178)	51 (193)
	655-712-001	Green	35 (2.41)	1.5 (5.68)	8 (30.3)	14 (53.0)	16.5 (62.5)	21 (79.5)	23 (87.1)	29.5 (112)	33 (125)	37 (140)	41 (155)
			50 (3.45)	1.5 (5.68)	11 (41.6)	15 (56.8)	18.5 (70.0)	24 (90.8)	28.5 (108)	35.5 (134)	44 (167)	49 (185)	53 (201)
			75 (5.17)	1.5 (5.68)	14 (53.0)	20 (75.7)	26 (98.4)	33 (125)	37 (140)	42.5 (161)	50 (189)	58 (220)	62 (235)
	655-712-002	Red	75 (5.17)	1.3 (4.92)	7 (26.5)	10 (37.9)	14 (53.0)	20 (75.7)	26 (98.4)	35 (132)	46 (174)	55 (208)	58 (220)
			100 (6.90)	1.3 (4.92)	9 (34.1)	12 (45.4)	18 (68.1)	25.5 (96.5)	32 (121)	41 (155)	54 (204)	62 (235)	68 (257)
			125 (8.62)	1.3 (4.92)	11 (41.6)	14.5 (54.9)	20 (75.7)	30 (114)	38 (144)	50 (189)	60.5 (229)	67.5 (255)	72 (273)
	655-717-000	Blue	150 (10.34)	1 (3.78)	7 (26.5)	9 (34.1)	12 (45.4)	17.5 (66.2)	23 (87.1)	34 (129)	51 (193)	66 (250)	76 (288)
			175 (12.07)	1 (3.78)	8 (30.3)	10 (37.9)	14 (53.0)	20.5 (77.6)	27 (102)	39 (148)	59 (223)	74 (280)	81 (307)
			200 (13.79)	1 (3.78)	9 (34.1)	12 (45.4)	17 (64.3)	24.5 (92.7)	32.5 (123)	47 (178)	66 (250)	79 (299)	85 (322)

P98H Steam Relief Capacities in Pounds per Hour (kg/h) **with Metal Diaphragm Only**

Nominal Body Size, Inches (DN)	Spring		Relief Pressure Setting PSIG (BAR)	Flow at Relief Setting, LB/H (kg/h)	Press Buildup Over Relief Setting, PSIG (BAR)								
	Part Number	Color Code			5 (0.34)	7 (0.48)	10 (0.69)	15 (1.03)	20 (1.38)	30 (2.07)	50 (3.45)	75 (5.17)	100 (6.90)
3/4, 1 (20, 25)	655-712-000	Yellow	15 (1.03)	25 (11.3)	91 (41.3)	135 (61.2)	180 (81.6)	260 (118)	360 (163)	440 (200)	580 (263)	770 (349)	950 (431)
			25 (1.72)	25 (11.3)	120 (54.4)	180 (81.6)	230 (104)	330 (150)	395 (179)	510 (231)	660 (299)	850 (386)	1030 (467)
			35 (2.41)	25 (11.3)	135 (61.2)	190 (86.2)	250 (113)	360 (163)	455 (206)	590 (268)	730 (331)	920 (417)	1100 (499)
	655-712-001	Green	35 (2.41)	25 (11.3)	68 (30.8)	110 (49.9)	160 (72.6)	230 (104)	330 (150)	500 (227)	625 (284)	785 (356)	940 (426)
			50 (3.45)	25 (11.3)	110 (48.9)	160 (72.6)	210 (95.3)	340 (154)	430 (195)	640 (290)	910 (413)	1100 (499)	1300 (590)
			75 (5.17)	25 (11.3)	180 (81.6)	230 (104)	320 (145)	445 (202)	630 (286)	820 (372)	1100 (499)	1350 (612)	1550 (703)
	655-712-002	Red	75 (5.17)	25 (11.3)	130 (59.0)	155 (70.3)	210 (95.3)	320 (145)	410 (186)	590 (268)	1050 (476)	1350 (612)	1550 (703)
			100 (6.90)	25 (11.3)	135 (61.2)	160 (72.6)	230 (104)	350 (159)	455 (206)	680 (308)	1180 (535)	1600 (726)	1800 (816)
			125 (8.62)	25 (11.3)	145 (65.8)	205 (93.0)	280 (127)	450 (204)	540 (245)	860 (390)	1400 (635)	1770 (803)	2000 (907)
	655-717-000	Blue	150 (10.34)	25 (11.3)	86 (39.0)	135 (61.2)	200 (90.7)	340 (154)	455 (206)	720 (327)	1270 (576)	1900 (862)	2200 (998)
			175 (12.07)	25 (11.3)	91 (41.3)	145 (65.8)	230 (104)	350 (159)	500 (227)	770 (349)	1350 (612)	2000 (907)	2400 (1089)
			200 (13.79)	25 (11.3)	160 (72.6)	225 (102)	320 (145)	450 (204)	630 (286)	950 (431)	1600 (726)	2300 (1043)	2700 (1225)

P98H Air Relief Capacities in SCFH (Nm³/h) **with Neoprene Diaphragm**

Nominal Body Size, Inches (DN)	Spring		Relief Pressure Setting PSIG (BAR)	Flow at Relief Setting, SCFH (Nm ³ /h)	Press Buildup Over Relief Setting, PSIG (BAR)								
	Part Number	Color Code			5 (0.34)	7 (0.48)	10 (0.69)	15 (1.03)	20 (1.38)	30 (2.07)	50 (3.45)	75 (5.17)	100 (6.90)
3/4, 1 (20, 25)	655-712-000	Yellow	15 (1.03)	500 (13.4)	5000 (134)	6500 (174)	7700 (206)	9500 (247)	9900 (265)	11,900 (319)	15,900 (426)	20,900 (560)	25,900 (694)
			25 (1.72)	500 (13.4)	7000 (188)	8500 (228)	9700 (260)	12,000 (322)	13,000 (348)	13,900 (373)	17,900 (480)	22,900 (614)	27,900 (748)
			35 (2.41)	500 (13.4)	9000 (241)	10,500 (281)	12,000 (322)	13,000 (348)	14,000 (375)	17,000 (456)	20,800 (557)	26,000 (697)	31,000 (831)
	655-712-001	Green	35 (2.41)	500 (13.4)	4500 (121)	5500 (147)	8500 (228)	13,000 (348)	14,000 (375)	17,000 (456)	20,800 (557)	26,000 (697)	31,000 (831)
			50 (3.45)	500 (13.4)	6000 (161)	7000 (188)	11,500 (308)	15,500 (415)	17,000 (456)	20,000 (536)	24,000 (643)	29,000 (777)	34,000 (911)
			75 (5.17)	500 (13.4)	7500 (201)	10,000 (268)	15,000 (402)	20,000 (536)	22,000 (590)	25,000 (670)	29,000 (777)	34,000 (911)	39,000 (1045)
	655-712-002	Red	75 (5.17)	500 (13.4)	5000 (134)	6500 (174)	10,000 (268)	15,000 (402)	20,000 (536)	24,000 (643)	29,000 (777)	34,000 (911)	39,000 (1045)
			100 (6.90)	500 (13.4)	6500 (174)	8500 (228)	13,000 (348)	20,000 (536)	24,000 (643)	29,000 (777)	34,000 (911)	39,000 (1045)	45,000 (1206)
			125 (8.62)	500 (13.4)	7000 (188)	9000 (241)	14,500 (389)	23,000 (616)	28,000 (750)	33,000 (884)	39,000 (1045)	45,000 (1206)	50,000 (1340)
	655-717-000	Blue	150 (10.34)	500 (13.4)	4700 (126)	6000 (161)	9000 (241)	14,000 (375)	19,000 (509)	28,000 (750)	42,000 (1126)	50,000 (1340)	56,000 (1501)
			175 (12.07)	500 (13.4)	5700 (153)	7000 (188)	10,500 (281)	17,000 (456)	23,000 (616)	34,000 (911)	49,000 (1313)	56,000 (1501)	61,000 (1635)
			200 (13.79)	500 (13.4)	5700 (153)	7500 (201)	12,000 (322)	18,000 (482)	24,000 (643)	36,000 (965)	54,000 (1447)	61,000 (1635)	66,000 (1769)

P98H Air Relief Capacities in SCFH (Nm³/h) with Metal Diaphragm

Nominal Body Size, Inches (DN)	Spring		Relief Pressure Setting PSIG (BAR)	Flow at Relief Setting, SCFH (Nm ³ /h)	Press Buildup Over Relief Setting, PSIG (BAR)								
	Part Number	Color Code			5 (0.34)	7 (0.48)	10 (0.69)	15 (1.03)	20 (1.38)	30 (2.07)	50 (3.45)	75 (5.17)	100 (6.90)
3/4, 1 (20, 25)	655-712-000	Yellow	15 (1.03)	500 (13.4)	2000 (53.6)	3000 (80.4)	4000 (107)	5700 (153)	8500 (228)	10,400 (279)	13,900 (373)	18,000 (482)	22,500 (603)
			25 (1.72)	500 (13.4)	2700 (72.4)	4000 (107)	5200 (139)	7200 (193)	8700 (233)	12,100 (324)	15,600 (418)	20,000 (536)	24,000 (643)
			35 (2.41)	500 (13.4)	3000 (80.4)	4200 (113)	5500 (147)	8000 (214)	10,000 (268)	13,000 (349)	17,300 (464)	21,700 (582)	26,000 (697)
	655-712-001	Green	35 (2.41)	500 (13.4)	1500 (40.2)	2500 (67.0)	3500 (93.8)	5200 (139)	7200 (193)	11,000 (295)	17,000 (456)	21,600 (579)	26,000 (697)
			50 (3.45)	500 (13.4)	2500 (67.0)	3500 (93.8)	4700 (126)	7500 (201)	9500 (255)	14,000 (375)	20,000 (536)	24,000 (643)	28,600 (766)
			75 (5.17)	500 (13.4)	4000 (107)	5200 (139)	7000 (188)	10,000 (268)	14,000 (375)	18,000 (482)	25,000 (670)	30,000 (804)	35,000 (938)
	655-712-002	Red	75 (5.17)	500 (13.4)	2900 (77.7)	3400 (91.1)	4700 (126)	7000 (188)	9200 (247)	13,000 (348)	23,000 (616)	30,000 (804)	35,000 (938)
			100 (6.90)	500 (13.4)	3000 (80.4)	3500 (93.8)	5000 (134)	7700 (206)	10,000 (268)	15,000 (402)	26,000 (697)	35,000 (938)	40,000 (1072)
			125 (8.62)	500 (13.4)	3200 (85.8)	4500 (121)	6200 (166)	9500 (255)	12,000 (322)	19,000 (509)	31,000 (831)	39,000 (1045)	45,000 (1206)
	655-717-000	Blue	150 (10.34)	500 (13.4)	1900 (50.9)	3000 (80.4)	4500 (121)	7500 (201)	10,000 (268)	16,000 (429)	28,000 (750)	42,000 (1126)	50,000 (1340)
			175 (12.07)	500 (13.4)	2000 (53.6)	3200 (85.8)	5000 (134)	7700 (206)	11,000 (295)	17,000 (456)	30,000 (804)	45,000 (1206)	54,000 (1447)
			200 (13.79)	500 (13.4)	3500 (93.8)	5000 (134)	7000 (188)	10,000 (268)	14,000 (375)	21,000 (563)	35,000 (938)	52,000 (1394)	60,000 (1608)

P98H Flanged Unit Dimension, Inches

