

P98H Back Pressure Regulator / Relief Valve 1-1/2" or 2"

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	
									Body Size
14									1-1/2 NPT
16									2 NPT
									Spring Range
									PSIG BAR
035									5 - 35 0.33 - 2.41
065									20 - 65 1.38 - 4.48
100									50 - 100 3.45 - 6.89
170									80 - 170 5.51-11.72
									Options
								0	Standard
								A	150 RF*
								B	300 RF*
								C	600 RF*
								D	Socket Weld*
									Registration
								0	Internal Registration
								2	External Registration
								0	Place Holder
									Valve Plug/Orifice
								A	416 SST (Metal to Metal)
								E	416 SST / Nitrile
								I	316 SST (Metal to Metal)
								N	316 SST / Neoprene
									Diaphragm
								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)		
Body	300 PSIG	WCB Steel
	250 PSIG @ 400°F	Cast Iron
	300 PSIG @ 300°F	Cast Iron
Pressure Ranges	5 – 35 PSIG	
	20 – 65 PSIG	
	50 – 100 PSIG	
	80 – 170 PSIG	
Body Size	1-1/2 NPT	
	2 NPT	
Weight Approximate		
1-1/2 NPT	55 lb	25 kg
2 NPT		

Spring Range

Body Size	PSIG	BAR	Spring Color Code
1-1/2 and 2 NPT	5 - 35	.34 - 2.4	Dark Gray
	20 - 65	1.4 - 4.5	Light Blue
	50 - 100	3.4 - 6.9	Light Gray
	80 - 170	5.5 - 11.7	Black

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 Maximum Body & Bonnet Temp Range

Material	Temperature Range (°F)	Temperature Range (°C)
Cast Iron	-40° to +406°F	-40° to +208°C
Steel	-20° to +450°F	-29° to +232°C

P98H Maximum Diaphragm & Seat Temp Range

Material	Temperature Range (°F)	Temperature Range (°C)
Nitrile	-40° to +180°F	-40° to +82°C
Neoprene	-40° to +180°F	-40° to +82°C

P98H Dimension, Inches

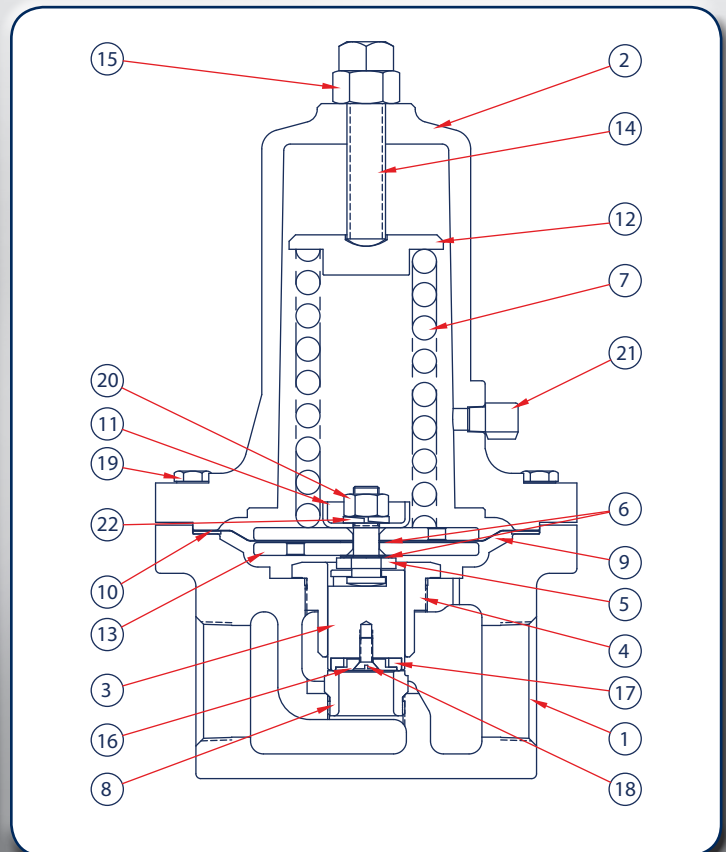
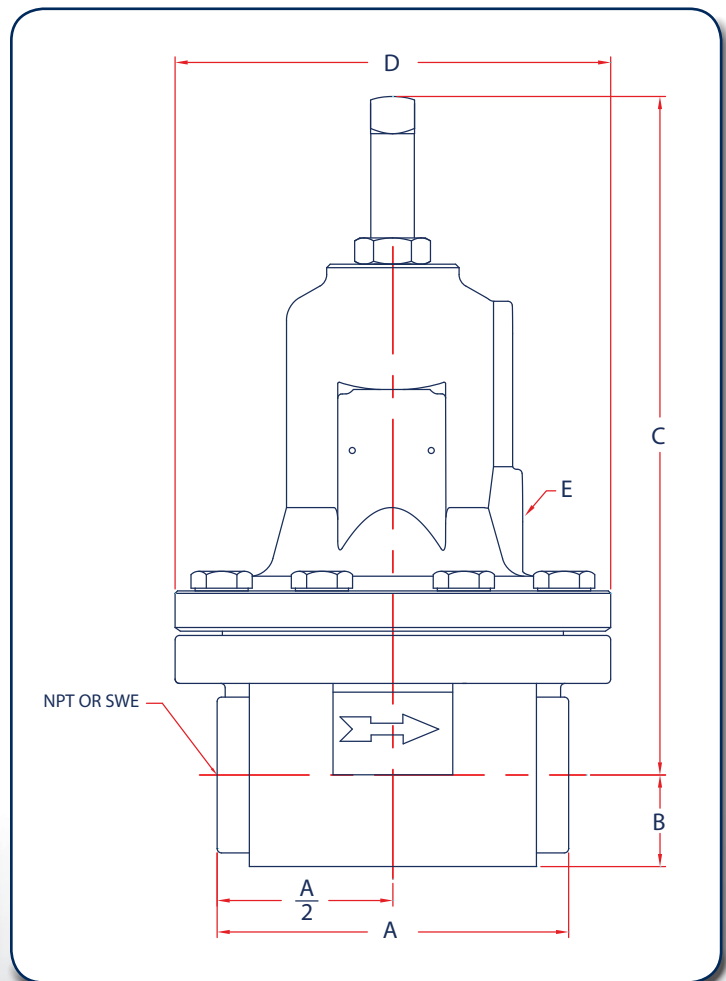
Nominal Body Size, Inches	A		B	C (Maximum)	D
	NPT or SWE	Flanged			
1-1/2, 2	6.62	14.0	1.88	14.12	8.19

Installation

These relief 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 1-1/2" & 2"

Item		Description	Qty.	Part Number
1	Body	Cast Iron 1-1/2"	1	664-430-000
		Steel 1-1/2"		664-431-000
		Cast Iron 2"		664-430-001
		Steel 2"		664-431-001
2	Bonnet	Steel Tapped	1	604-270-000
		Iron Tapped		604-269-000
3	Valve Plug	416 Stainless Steel w/Elastomer	1	639-142-000
		416 Stainless Steel/ Metal to Metal		639-141-000
		316 Stainless Steel w/Elastomer		639-142-001
		316 Stainless Steel/ Metal to Metal		639-141-001
4	Valve Plug Guide	416 Stainless Steel	1	626-118-000
		316 Stainless Steel		626-118-001
5	Pusher Post	416 SS Elastomer	1	613-040-000
		416 SS Metal to Metal		613-039-000
		316 SS Elastomer		613-040-001
		316 SS Metal to Metal		613-039-001
6		Diaphragm Assembly Gasket	2	624-099-000
7	Range Springs	5 - 35 PSIG, Dark Gray	1	655-768-000
		20 - 65 PSIG, Light Blue		655-768-001
		50 - 100 PSIG, Light Gray		655-768-002
		80 - 170 PSIG, Black		655-768-003
8	Orifice	416SS Metal to Metal	1	688-066-000
		316SS Metal to Metal		688-066-001
		416SS Composite		688-067-000
		316SS Composite		688-067-001
9	Diaphragm	302SS	2	618-108-000
		Neoprene	1	618-109-000
10		Diaphragm Gasket (Metal Dia's Only)	1	624-100-000
11		Lower Spring Seat	1	626-117-000
12		Upper Spring Seat	1	626-116-000
13	Piston	Steel	2	637-337-000
		Stainless		637-337-001
14		Adjusting Screw - Steel	1	648-569-000
15		Lock Nut, Steel	1	634-213-000
16	L-Ring Retainer	416SS (Elastomer Plug Only)	1	643-222-000
		316SS (Elastomer Plug Only)		643-222-001
17		L-ring - Nitrile (Elastomer Plug Only)	1	649-337-000
18		Flat Head Screw (Elastomer Plug Only)	1	648-570-000
19		Build Screw	8	648-467-009
20		Diaphragm Assembly Locknut	1	634-212-000
21		Vent Screen	1	836-004-000
22		Lock Washer (Split Ring)	1	662-000-018
23		Name Plate (not shown)	1	632-524-000
24		Name Plate Drive Screw (not shown)	2	648-464-000



P98H Air Relief Capacities with an Elastomer Diaphragm

Body Size, Inches (DN)	Spring Range		Relief Pressure Setting		Flow at Relief Setting		Pressure Buildup Over Relief Setting, PSIG (BAR)											
							5 (0.34)		7 (0.48)		10 (0.69)		15 (1.03)		20 (1.38)		30 (2.07)	
							SCFH	Nm³/h	SCFH	Nm³/h	SCFH	Nm³/h	SCFH	Nm³/h	SCFH	Nm³/h	SCFH	Nm³/h
1-1/2" (40) & 2" (50)	5 to 35 655-768-000	Dark Gray	5	0.3	900	24.1	6300	169	7000	188	10000	268	20000	536	29000	616	41000	1099
			10	0.7	900	24.1	6500	174	8000	214	12000	322	18000	482	26000	697	32000	1179
			15	1.0	900	24.1	7000	188	9000	241	13000	348	20000	536	29000	777	35000	938
			25	1.7	900	24.1	7200	193	10000	268	15000	402	22000	590	33000	884	41000	1099
			35	2.4	900	24.1	9000	241	11000	295	16000	429	24000	643	37000	992	37000	992
	20 to 65 655-768-001	Light Blue	25	1.7	900	24.1	8500	228	11000	295	15000	402	21000	563	27000	724	37600	1008
			35	2.4	900	24.1	8600	230	12000	322	17000	456	23000	616	29000	777	43000	1152
			50	3.4	900	24.1	9300	249	13000	348	19000	509	25000	670	33000	884	48000	1286
			65	4.5	900	24.1	9600	257	13000	348	19000	509	26000	697	37000	992	57000	1528
	50 to 100 655-768-002	Light Gray	50	3.4	900	24.1	6100	163	8900	239	12000	322	20000	536	27000	724	41000	1099
			75	5.2	900	24.1	6200	166	9000	241	13000	348	21000	563	29000	777	47000	1260
			100	6.9	900	24.1	6600	177	9700	260	15000	402	23000	616	32000	858	54000	1447
	80 to 170 655-768-003	Black	75	5.2	900	24.1	4600	123	6500	174	10000	268	17000	456	22000	590	36000	965
			100	6.9	900	24.1	5600	150	8500	228	12000	322	19000	509	26000	697	42000	1126
			125	8.6	900	24.1	6200	166	9200	247	14000	375	22000	590	30000	804	47000	1260
			170	11.7	900	24.1	6500	174	940	252	15000	402	23000	616	32000	858	52000	1394

P98H Air Relief Capacities with a Stainless Steel Diaphragm

Body Size, Inches (DN)	Spring Range		Relief Pressure Setting		Flow at Relief Setting		Pressure Buildup Over Relief Setting, PSIG (BAR)											
							5 (0.34)		7 (0.48)		10 (0.69)		15 (1.03)		20 (1.38)		30 (2.07)	
							SCFH	Nm³/h	SCFH	Nm³/h	SCFH	Nm³/h	SCFH	Nm³/h	SCFH	Nm³/h	SCFH	Nm³/h
1-1/2" (40) & 2" (50)	5 to 35 655-768-000	Dark Gray	5	0.3	900	24.1	6000	161.0	8800	236.0	10500	281.0	16000	429.0	18000	482.0	23000	616.0
			10	0.7	900	24.1	7200	193.0	10000	268.0	13500	362.0	18000	482.0	21000	563.0	25700	689.0
			15	1.0	900	24.1	7500	201.0	10500	281.0	14500	389.0	19500	523.0	23000	616.0	28000	750.0
			25	1.7	900	24.1	8500	228.0	11000	295.0	16000	429.0	22000	590.0	27000	724.0	32700	876.0
			35	2.4	900	24.1	8700	233.0	11700	314.0	17000	456.0	24000	643.0	30000	804.0	38000	1018.0
	20 to 65 655-768-001	Light Blue	25	1.7	900	24.1	6000	161.0	8000	214.0	11000	295.0	17500	469.0	20000	536.0	32000	858.0
			35	2.4	900	24.1	6700	180.0	8800	236.0	15000	402.0	21000	563.0	27000	724.0	37000	992.0
			50	3.4	900	24.1	7000	188.0	9300	249.0	16000	429.0	23000	616.0	29000	777.0	42000	1126.0
			65	4.5	900	24.1	8000	214.0	11000	295.0	17000	456.0	25000	670.0	32000	858.0	48000	1286.0
	50 to 100 655-768-002	Light Gray	50	3.4	900	24.1	2400	64.0	7000	188.0	10500	281.0	16000	429.0	20000	536.0	30000	804.0
			75	5.2	900	24.1	3800	102.0	10500	281.0	15500	415.0	23000	616.0	30000	804.0	44000	1179.0
			100	6.9	900	24.1	6000	161.0	12000	322.0	18000	482.0	26000	697.0	34000	911.0	50000	1340.0
	80 to 170 655-768-003	Black	75	5.2	900	24.1	2700	72.0	6000	161.0	9000	241.0	14000	375.0	18000	482.0	30000	804.0
			100	6.9	900	24.1	3000	80.0	8000	214.0	15000	402.0	21000	563.0	27000	724.0	41000	1099.0
			125	8.6	900	24.1	7000	188.0	9000	241.0	16500	442.0	23000	616.0	30000	804.0	46000	1233.0
			170	11.7	900	24.1	7300	196.0	10000	268.0	17000	456.0	24000	643.0	32000	858.0	48000	1286.0

P98H Water Relief Capacities with an Elastomer Diaphragm

Body Size, Inches (DN)	Spring Range		Relief Pressure Setting		Flow at Relief Setting		Pressure Buildup Over Relief Setting, PSIG (BAR)											
							5 (0.34)		7 (0.48)		10 (0.69)		15 (1.03)		20 (1.38)		30 (2.07)	
							GPM	l/min	GPM	l/min	GPM	l/min	GPM	l/min	GPM	l/min	GPM	l/min
1-1/2" (40) & 2" (50)	5 to 35 655-768-000	Dark Gray	5	0.3	3.6	13.6	15	57.0	22	83.0	33	125.0	38	144.0	43	163.0	50	189.0
			10	0.7	3.6	13.6	18	68.0	26	98.0	37	140.0	41	155.0	45	170.0	52	197.0
			15	1.0	3.6	13.6	21	80.0	30	114.0	40	151.0	55	208.0	59	223.0	67	254.0
			25	1.7	3.6	13.6	26	98.0	36	136.0	50	189.0	68	257.0	87	329.0	96	363.0
			35	2.4	3.6	13.6	32	121.0	40	151.0	56	212.0	75	284.0	90	341.0	98	371.0
	20 to 65 655-768-001	Light Blue	25	1.7	3.0	11.4	16	61.0	22	83.0	32	121.0	50	189.0	65	246.0	72	273.0
			35	2.4	3.0	11.4	20	76.0	26	98.0	36	136.0	55	208.0	70	265.0	100	379.0
			50	3.4	3.0	11.4	25	95.0	31	117.0	40	151.0	60	227.0	78	295.0	115	435.0
			65	4.5	3.0	11.4	35	132.0	41	155.0	50	189.0	70	265.0	95	360.0	130	492.0
	50 to 100 655-768-002	Light Gray	50	3.4	2.5	9.5	15	57.0	24	91.0	28	106.0	40	151.0	62	235.0	100	379.0
			75	5.2	2.5	9.5	19	72.0	28	106.0	32	121.0	45	170.0	68	257.0	110	416.0
			100	6.9	2.5	9.5	22	83.0	32	121.0	35	132.0	50	189.0	75	284.0	120	454.0
	80 to 170 655-768-003	Black	75	5.2	2.3	8.7	7	27.0	12	45.0	18	68.0	34	129.0	40	151.0	85	322.0
			100	6.9	2.3	8.7	9	34.0	14	53.0	20	76.0	37	140.0	46	174.0	90	341.0
			125	8.6	2.3	8.7	12	45.0	17	64.0	25	95.0	40	151.0	51	193.0	95	360.0
			170	11.7	2.3	8.7	15	57.0	20	76.0	28	106.0	45	170.0	55	208.0	100	379.0

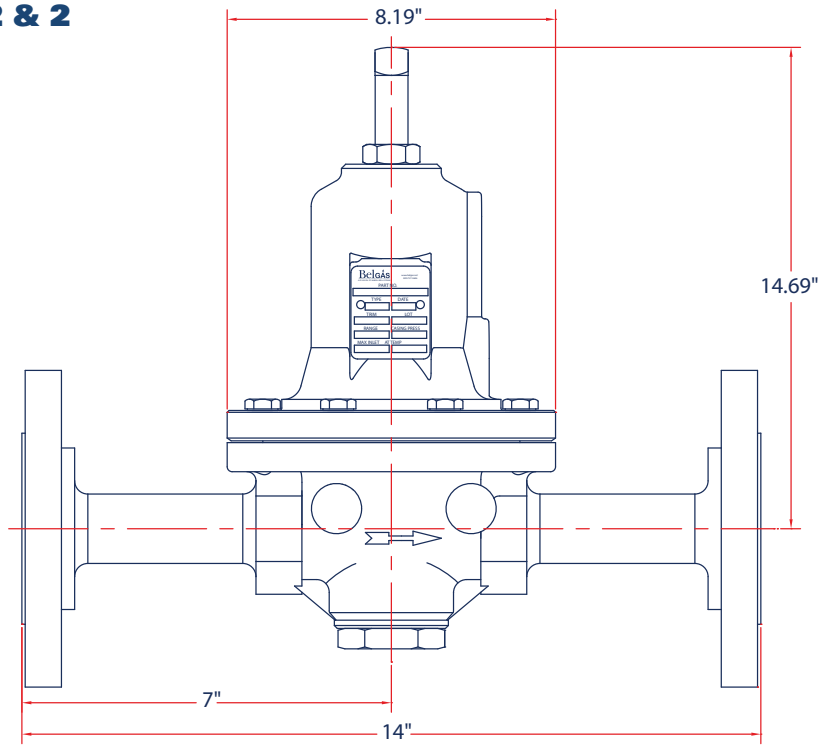
P98H Water Relief Capacities with a Stainless Steel Diaphragm

Body Size, Inches (DN)	Spring Range		Relief Pressure Setting		Flow at Relief Setting		Pressure Buildup Over Relief Setting, PSIG (BAR)											
							5 (0.34)		7 (0.48)		10 (0.69)		15 (1.03)		20 (1.38)		30 (2.07)	
							GPM	l/min	GPM	l/min	GPM	l/min	GPM	l/min	GPM	l/min	GPM	l/min
1-1/2" (40) & 2" (50)	5 to 35 655-768-000	Dark Gray	5	0.3	3.6	13.6	18	68.0	3	27.0	35	132.0	40	151.0	45	170.0	53	201.0
			10	0.7	3.6	13.6	20	76.0	27	102.0	39	148.0	43	163.0	47	178.0	55	208.0
			15	1.0	3.6	13.6	23	87.0	30	114.0	43	163.0	60	227.0	64	242.0	73	276.0
			25	1.7	3.6	13.6	26	98.0	34	129.0	46	174.0	65	246.0	75	284.0	82	310.0
			35	2.4	3.6	13.6	29	110.0	37	140.0	50	189.0	70	265.0	82	310.0	95	360.0
	20 to 65 655-768-001	Light Blue	25	1.7	3.0	11.4	17	64.0	24	91.0	36	136.0	48	182.0	65	246.0	71	269.0
			35	2.4	3.0	11.4	20	76.0	27	102.0	40	151.0	52	197.0	70	265.0	80	303.0
			50	3.4	3.0	11.4	24	91.0	30	114.0	43	163.0	57	216.0	76	288.0	90	341.0
			65	4.5	3.0	11.4	30	114.0	35	132.0	46	174.0	63	238.0	80	303.0	100	379.0
	50 to 100 655-768-002	Light Gray	50	3.4	2.5	9.5	14	53.0	23	87.0	34	129.0	47	178.0	65	246.0	85	322.0
			75	5.2	2.5	9.5	17	64.0	26	98.0	37	140.0	53	201.0	70	265.0	92	348.0
			100	6.9	2.5	9.5	20	76.0	30	114.0	40	151.0	58	220.0	76	288.0	102	386.0
	80 to 170 655-768-003	Black	75	5.2	2.3	8.7	8	30.0	13	49.0	23	87.0	33	125.0	50	189.0	65	246.0
			100	6.9	2.3	8.7	10	38.0	16	61.0	26	98.0	37	140.0	56	212.0	72	273.0
			125	8.6	2.3	8.7	13	49.0	18	68.0	29	110.0	42	159.0	60	227.0	80	303.0
			170	11.7	2.3	8.7	16	61.0	20	76.0	32	121.0	46	174.0	63	238.0	85	322.0

P98H Steam Relief Capacities with a Stainless Steel Diaphragm

Body Size, Inches (DN)	Spring Range		Relief Pressure Setting		Flow at Relief Setting		Pressure Buildup Over Relief Setting, PSIG (BAR)											
							5 (0.34)		7 (0.48)		10 (0.69)		15 (1.03)		20 (1.38)		30 (2.07)	
	Range Part Number	Color Code	PSIG	BAR	GPM	l/min	GPM	l/min	GPM	l/min	GPM	l/min	GPM	l/min	GPM	l/min	GPM	l/min
1-1/2" (40) & 2" (50)	5 to 35 655-768-000	Dark Gray	5	0.3	45	20.4	300	136.0	440	200.0	525	238.0	820	372.0	940	426.0	1100	499.0
			10	0.7	45	20.4	360	163.0	500	227.0	675	306.0	945	429.0	1060	481.0	1300	590.0
			15	1.0	45	20.4	375	170.0	525	238.0	725	329.0	975	442.0	1180	535.0	1420	644.0
			25	1.7	45	20.4	425	193.0	550	249.0	800	363.0	1100	499.0	1350	612.0	1650	748.0
			35	2.4	45	20.4	435	197.0	585	265.0	850	386.0	1200	544.0	1500	680.0	1900	862.0
	20 to 65 655-768-001	Light Blue	25	1.7	45	20.4	300	136.0	400	181.0	550	249.0	875	397.0	1000	454.0	1620	735.0
			35	2.4	45	20.4	335	152.0	440	200.0	750	340.0	1025	465.0	1350	612.0	1850	839.0
			50	3.4	45	20.4	350	159.0	465	211.0	800	363.0	1150	522.0	1450	658.0	2100	953.0
			65	4.5	45	20.4	400	181.0	550	249.0	850	386.0	1250	567.0	1600	726.0	2400	1089.0
	50 to 100 655-768-002	Light Gray	50	3.4	45	20.4	120	54.0	35	159.0	525	238.0	800	363.0	1000	454.0	1500	680.0
			75	5.2	45	20.4	190	86.0	520	236.0	775	352.0	1150	522.0	1500	680.0	2200	998.0
			100	6.9	45	20.4	300	136.0	600	272.0	900	408.0	1300	590.0	1700	771.0	2500	1134.0
	80 to 170 655-768-003	Black	75	5.2	45	20.4	145	66.0	300	136.0	450	204.0	700	318.0	900	408.0	1500	680.0
			100	6.9	45	20.4	150	68.0	400	181.0	750	340.0	1025	465.0	1350	612.0	2050	930.0
			125	8.6	45	20.4	350	159.0	450	204.0	825	374.0	1150	522.0	1500	680.0	2300	1043.0
			170	11.7	45	20.4	365	166.0	500	227.0	850	386.0	1200	544.0	160	726.0	2400	1089.0

P98H Flanged 1-1/2 & 2



P98H 1-1/2" & 2" Repair Kits

	Kit Includes	Part Number
302SS Diaphragm	302SS Diaphragm (2), Diaphragm Gasket, Thru Hole Gasket, 416SS Orifice, 416SS/Nitrile Valve Plug, Seat O-ring Retainer and O-ring, Seat Machine Screw	971-P98-500
	302SS Diaphragm (2), Diaphragm Gasket, Thru Hole Gasket, 416SS Orifice, 416SS/M to M Valve Plug	971-P98-501
	302SS Diaphragm (2), Diaphragm Gasket, Thru Hole Gasket, 316SS Orifice, 316SS/M to M Valve Plug	971-P98-506
	302SS Diaphragm (2), Diaphragm Gasket, Thru Hole Gasket, 316SS Orifice, 316SS/Nitrile Valve Plug, Seat O-ring Retainer and O-ring, Seat Machine Screw	971-P98-528
Neoprene Diaphragm	Neoprene Diaphragm, Thru Hole Gasket, 416SS Orifice, 416SS/Nitrile Valve Plug, Seat O-ring Retainer and O-ring, Seat Machine Screw	971-P98-502
	Neoprene Diaphragm, Thru Hole Gasket, 416SS Orifice, 416SS/M to M Valve Plug	971-P98-503
	Neoprene Diaphragm, Thru Hole Gasket, 316SS Orifice, 316SS/M to M Valve Plug	971-P98-518
	Neoprene Diaphragm, Thru Hole Gasket, 316SS Orifice, 316SS/Nitrile Valve Plug, Seat O-ring Retainer and O-ring, Seat Machine Screw	971-P98-530

