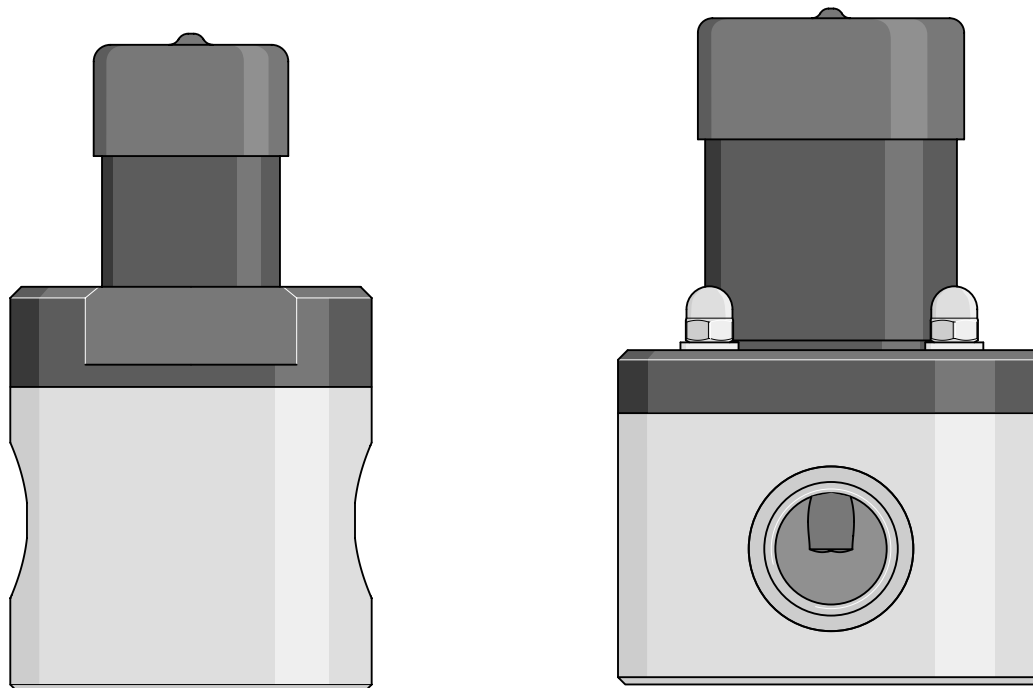


Operating Instructions

ProMinent® Backpressure and Pressure Relief Valves



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Read the operating instructions before installation and use. The warranty does not cover damages due to faulty operation. Keep for reference and replacement information.

BA B/PRVI 01 5/02 NA Order no.7750089

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Operating Instructions for ProMinent® Backpressure and Pressure Relief Valves

General Safety Considerations

SAFETY INSTRUCTIONS

- Wear protective clothing and glasses when working with or near chemicals.
 - Refer to the MSDS for all chemicals being used.
 - Use only ProMinent® parts. Use of other parts may result in damage to equipment or injury.
 - Flush all components that are in contact with chemicals prior to servicing.
 - Secure all chemicals and equipment making them inaccessible to children and pets.
 - Dispose of all chemicals and waste according to all local, state and federal regulations.
-
- Stop the flow of sample through the system prior to working on the pump.
 - Do not exceed the maximum operating pressure.

Safety Operating Procedures

UNPACKING

CHECK ALL EQUIPMENT FOR DAMAGE AND FOR COMPLETENESS AGAINST THE ORDER. REPORT INCORRECT ORDERS OR DAMAGES TO THE SELLER IMMEDIATELY.

The carton should contain:

1 Backpressure or Pressure Relief Valve as ordered
Accessories as ordered

INTRODUCTION

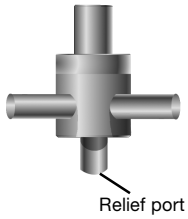
ProMinent® diaphragm pressure relief valves are designed to protect chemical feed systems from overpressure caused by defective equipment or by blockage in the chemical line. Chemical flows through the valve via an internal chamber. When the pressure in the chemical line exceeds the preset pressure of the valve, the diaphragm lifts off the seat and the chemical then flows out the bottom port back into the chemical tank. The relief pressure is adjustable from 0-150 psig by the adjuster in the top of the valve.

ProMinent® diaphragm backpressure valves are used to enhance the performance of the chemical feed pumps by providing a constant head pressure. These valves can also be used as an antisiphon valve. The diaphragm is held against the seat by an internal spring. The backpressure is adjustable from 0-150 psig. When the inlet pressure exceeds the preset pressure, the diaphragm lifts off the seat and the chemical flows to the injection point.

INSTALLATION

Pressure Relief Valve

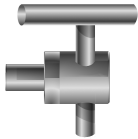
Install as close to the chemical pump discharge valve as possible, without any other equipment, especially shut-off valves, between the pressure relief valve and the pump. The chemical must flow across the valve, in the direction of the arrow.



The relief port in the bottom of the valve should be vented back to the chemical tank or directly to the drain. No backpressure can be applied to the outlet of the valve. This will impair the valve's ability to relieve at the preset pressure. The valve should not be installed across the pump. That is, the valve should not be connected from the discharge of the pump to the suction side of the pump if there is a check valve in the suction line that could prevent pressure relief.

Back Pressure Valve

The backpressure valve can be installed anywhere in the discharge line, provided there is some downstream pressure at the dosage point via an injection valve or line pressure. If there is no downstream pressure, the backpressure valve should be installed at the dosage point to prevent drainage of the chemical line. The chemical must flow across the valve, in the direction of the arrow.

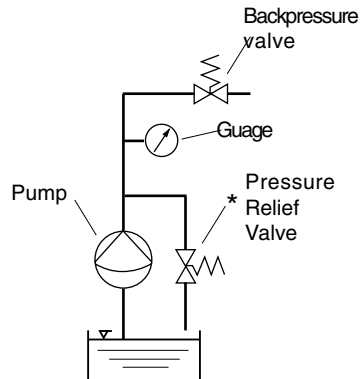


Backpressure valve on tee for pressure relief

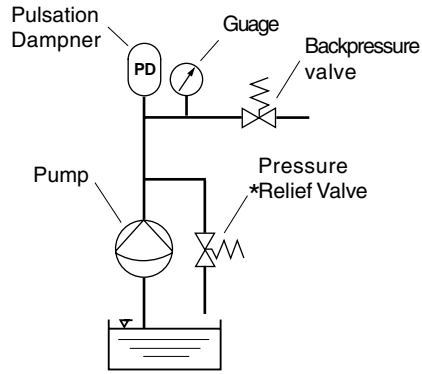
The performance of the backpressure valve will be enhanced with the

Typical Installations

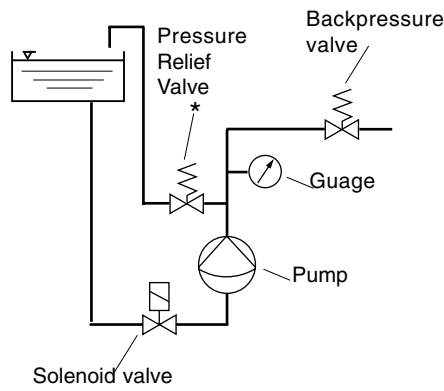
Backpressure valve to produce a constant pressure to pump against.



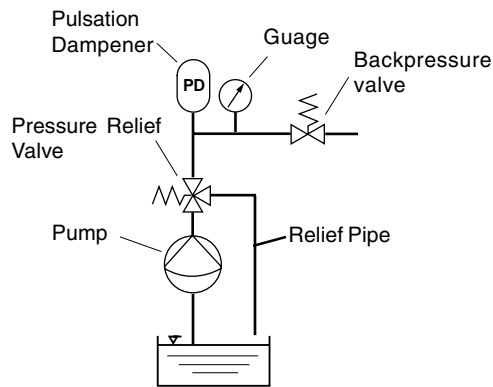
Backpressure valve in conjunction with a pulsation dampener.



Backpressure valve used when the discharge pressure is high.



Pressure relief valve to protect pump from overpressure





DESCRIPTION OF CONTROLS AND OPERATION

Adjust the backpressure and the pressure relief valves by turning the pressure adjuster on the valves with a special adjusting wrench (available from ProMinent®), to the desired pressure. The valves have a screwdriver slot to adjust the pressure. Turning clockwise increases the pressure and counterclockwise decreases the pressure.

HELPFUL TIPS

1L = 0.264 gallon

1000 mL = 1 L

1 bar = 14.5 psig

SPECIFICATIONS

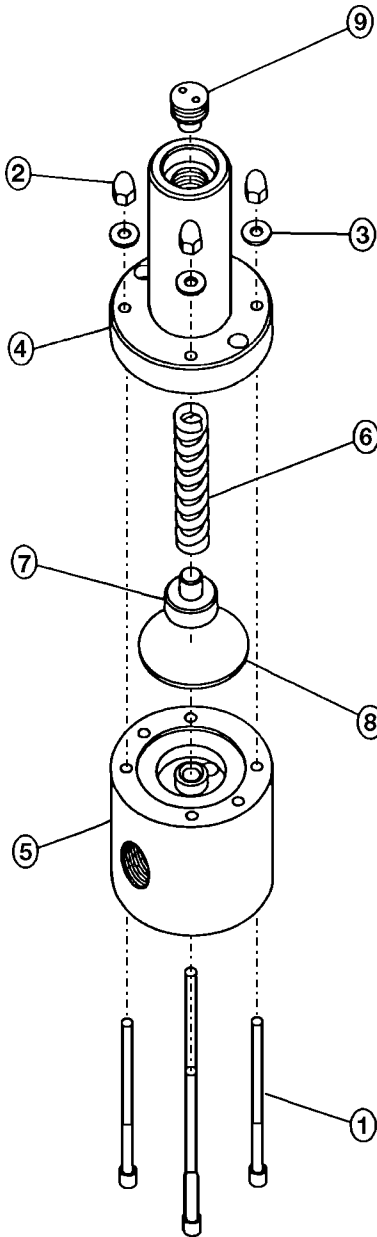
Size:	1/4", 1/2", 3/4", 1", 1 1/2", 2" NPT
Diaphragm material:	PTFE-faced EPDM
Liquid handling materials:	PP, PVC, PTFE, PVDF, 316 Stainless Steel
Pressure adjustments:	0-150 psig
Flow rates at 45 psig:	1/4" - 132gph 1/2" - 132gph 3/4" - 235 gph 1" - 345 gph 1-1/2" - 740gph 2" - 740gph
Max. Temperature:	PP - 122°F PVC - 122°F PTFE - 250°F PVDF - 250°F 316 Stainless - 250°F

MAINTENANCE

Routinely look for leaks that could indicate a diaphragm rupture. Replacement of the diaphragm can be done without taking the valve out of the chemical line.

Replacing the diaphragm

- Relieve the pressure from the system.
- Flush the chemical lines prior to disassembling the valve.
- Unscrew the pressure adjuster to relieve the pressure from the diaphragm.
- Unscrew the valve top from the valve bottom.
- Remove the 4 bolts from the top of the valve.



Example of a backpressure valve

- Lift off the top of the valve.
- Inspect the diaphragm and replace as necessary.
- Inspect the adjustment spring for rust or corrosion and replace if necessary.
- Replace the spring and the spring bumper into the top of the valve.
- Slide the top of the valve back over the bolts (Type B).
- Tighten the screws.
- Screw the valve top to the valve bottom and tighten.
- Screw in the pressure adjuster to approximately the same position it was prior to disassembly.
- Use a pressure gauge to adjust the valve to the desired pressure setting.

SPARE PARTS

1. Bolts
2. Hex Nut
3. 1/4" Flat Washer
4. Valve Lid
5. Valve Body
6. Pressure Spring
7. Spring Plate
8. Diaphragm
9. Pressure Adjustment Screw

REPAIR SERVICE

Repairs must be done by ProMinent® Fluid Controls. Call your distributor or ProMinent® at (412) 787-2484 for a return goods authorization. DO NOT return any goods without authorization. All returned items must be free of hazardous chemicals and clean when returned.

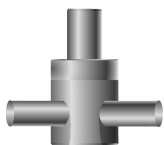
TROUBLESHOOTING

Check for clogs, diaphragm ruptures or corrosion of the spring.

Part Numbers and Accessories

Adjusting Wrench (fits all valves) 7302200

1/4" FNPT VALVES



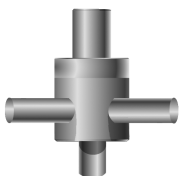
Backpressure Valve (2 port)

<u>Material</u>	<u>Backpressure Valve (2-port)</u>	<u>Pressure Relief Valve (3-port)</u>
PP	1009444	1009452
PVC	1009445	1009453
PVDF	1009446	1009454
316 SS	1009447	1009455

Tubing Adapters

(1 required per valve port): 1/4" x 3/16" tubing x 1/4" MNPT

PP/EPDM (PP1)	7358222
PP/Viton (PP2)	7358226
PVC/Viton (NP6)	7358223
PTFE (TT1)	7358224



Pressure Relief Valve (3 port)

1/2" FNPT valves

<u>Material</u>	<u>Backpressure Valve (2-port)</u>	<u>Pressure Relief Valve (3-port)</u>
PP	1006846	1006858
PVC	1006850	1006862
PVDF	1006854	1006866
316 SS	1008796	1008800

Tubing Adapters

(1 required per valve port): 1/2" x 3/8" tubing x 1/2" MNPT

PP/EPDM (PP1)	7358220
PP/Viton (PP2)	7358227
PVC/Viton (NP6)	7358221
PTFE (TT1)	7358225

3/4" FNPT valves

<u>Material</u>	<u>Backpressure Valve (2-port)</u>	<u>Pressure Relief Valve (3-port)</u>
PP	1006847	1006959
PVC	1006851	1006863
PVDF	1006855	1006867
316 SS	1008797	1008801

Part Numbers and Accessories (CONT.)

1" FNPT valves

Material	Backpressure Valve (2-port)	Pressure Relief Valve (3-port)
PP	1006848	1006860
PVC	1006852	1006864
PVDF	1006856	1006868
316 SS	1008798	1008802

1-1/2" FNPT valves

<u>Material</u>	<u>Backpressure Valve (2-port)</u>	<u>Pressure Relief Valve (2-port)</u>
PP	1006849	1006865
PVC	1006853	1006865
PVDF	1006857	1006869
316 SS	1008799	1008803

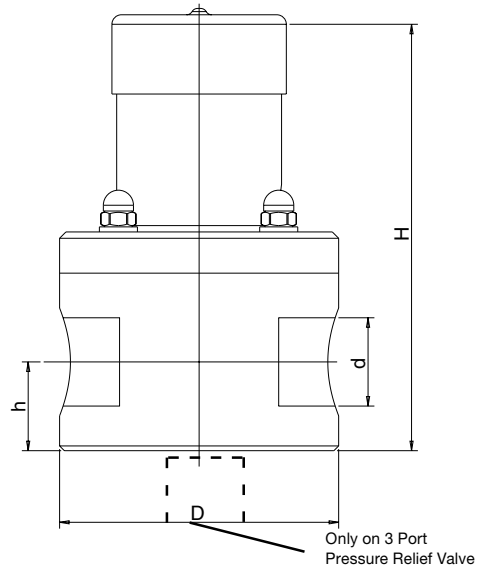
2" FNPT valves

<u>Material</u>	<u>Backpressure Valve (2-port)</u>	<u>Pressure Relief Valve (2-port)</u>
PP	1009448	1009456
PVC	1009449	1009457
PVDF	1009450	1009458
316 SS	1009451	1009459

Spare Diaphragms

1/4" - 1/2" valve PTFE/EPDM	1006813	1006813
3/4" - 1" valve PTFE/EPDM	1006814	1006814
1 1/2" valve PTFE/EPDM	1006815	1006815

Dimensions



Valve size d [inches]	Thread type	h [mm]	h (in.)	D [mm]	D (in.)	H [mm]	H (in.)
1/4	NPT	31	1.2	65	2.6	125	4.9
1/2	NPT	31	1.2	65	2.6	125	4.9
3/4	NPT	28	1.1	88	3.5	136	5.4
1	NPT	36	1.4	98	3.9	145	5.7
1 1/2	NPT	56	2.2	118	4.6	217	8.5
2	NPT	56	2.2	118	4.6	217	8.5