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M-Series Instruction Manual

**Back Pressure Valves
Pressure Relief Valves**

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INTRODUCTION

GRIFFCO diaphragm back pressure valves are used to enhance the performance of chemical feed pumps and systems by providing a constant discharge head pressure. These valves also function as an anti-siphon valve. The diaphragm is held against the seat by the internal spring. Back pressure is adjustable from 10 - 150 psi via the adjustment screw. When the inlet pressure exceeds the preset pressure the diaphragm lifts off the seat and the chemical flows to the injection point. After each discharge stroke of the pump, as the pressure drops, the diaphragm reseats itself.

GRIFFCO diaphragm pressure relief valves are designed to protect chemical feed pumps and systems from overpressure caused by defective equipment or blockages in the chemical line. The 3 port design allows chemical to flow 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 to the chemical tank. Relief pressure is adjustable from 10 - 150 psi via the adjustment screw in the top of the valve.

INSTALLATION

Back Pressure Valve:

Generally, the back pressure valve can be installed anywhere in the discharge line, provided there is some downstream pressure at the dosage point. If there is no downstream pressure the back pressure valve should be installed at the dosage point to prevent siphoning and drainage of the chemical line. All **GRIFFCO** valves are factory set at 50 psi, unless otherwise specified. Field adjustment is possible with the adjustment screw, (approximate 25 psi/revolution with a 10-150 psi rated spring).

Back pressure valve performance will be enhanced with the installation of a pulsation dampener to smooth out the discharge / suction cycles of the pump. Thus, the diaphragm is free to float inside the valve chamber, minimizing the wear on the stress points of the diaphragm. Pulsation dampeners will also reduce the pressure drop across the valve by reducing peak flows. Backpressure valves should be installed downstream of the dampener. For most applications diaphragm type dampeners are required. Generally speaking 5 to 10% dampening is sufficient. Consult with your pump manufacturer to get his recommendations.

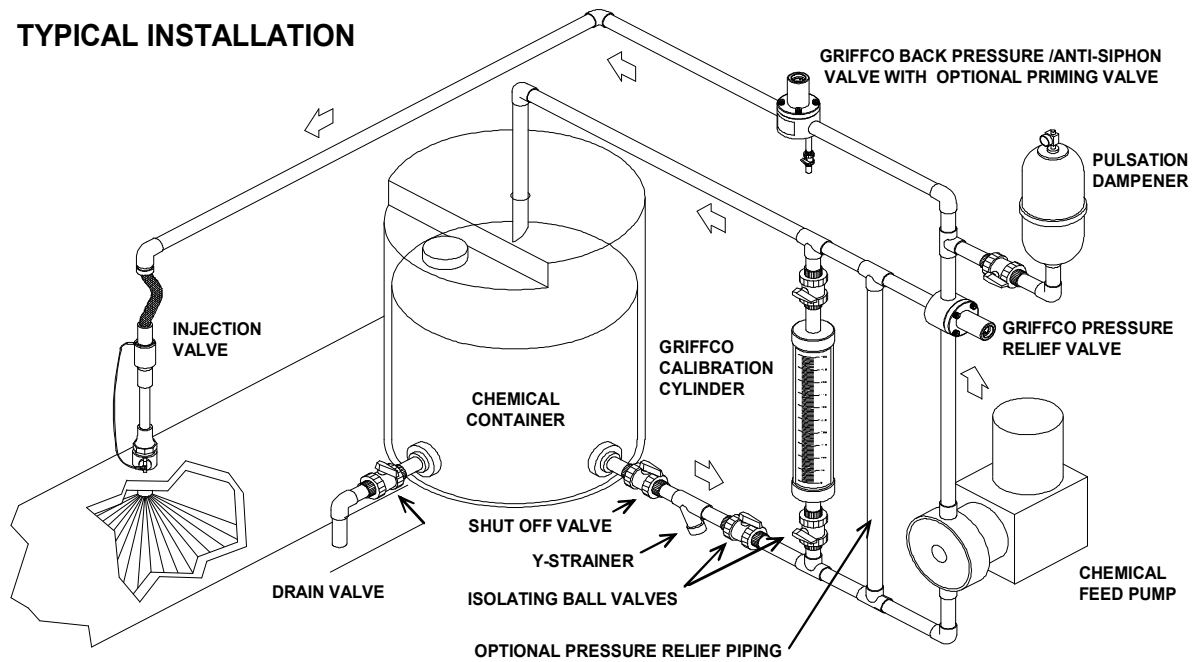
Pressure Relief Valve:

Installation should be made as close to the chemical pump discharge valve as possible, without any equipment, especially shut-off valves, between the valve and the pump. Direction of flow must be across the valve; however the side of entry is not important. All **GRIFFCO** valves are factory set at 50psi, however field adjustment is possible with the adjustment screw.

The optimum installation for the relief valve is to vent the relief port back to the chemical tank, or directly to a containment area. However if this is not possible, the relief port can be piped back into the suction side of the pump. This will apply the suction head to the relief port. To compensate, divide the NPSH by 4 and add this pressure to the relief valve setting.

Do not install shut-off valves in the relief line.

TYPICAL INSTALLATION



MAINTENANCE:

The pressure relief and back pressure valves were designed with minimizing the amount of maintenance required to keep the valves in operation. However, periodic replacement of the diaphragm is required. A parts kit can be purchased from your local Griffco Valve distributor. To facilitate inspection and replacement, the valve layout is such that removal of the diaphragm can be done without taking the valve out of the chemical line.

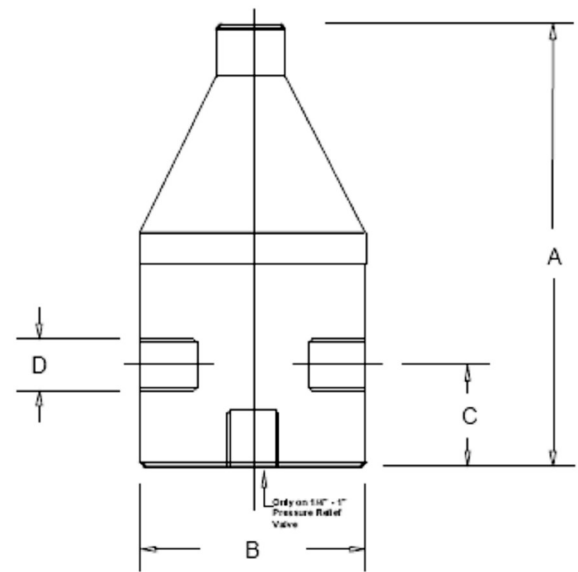
Caution: Ensure the system is not under pressure and that the chemical lines are flushed with water before disassembly.

Unscrew the pressure adjustment screw to remove the pressure from the spring. Remove the 4 bolts and lift off the valve top.

Inspect the valve seat and diaphragm, replace the diaphragm if necessary (White PTFE side down). Check the adjustment spring to make sure there is no rust or corrosion, replace if necessary. Place the support disc and the spring onto the diaphragm and place the top back over the four bolt holes.

Tighten the 4 bolts, and then replace the adjustment screw. Turn the adjustment screw clockwise to approximately the same position as it was prior to disassembly. If an exact pressure setting is required or a different pressure is desired a pressure gauge should be used to verify the setting. Turning the adjustment screw clockwise will increase pressure.

DIMENSIONS:



D	A (in)	B (in)	C (in)
1/4" (P)	3.55	2.35	0.75
1/4" (M)	3.55	2.35	0.75
3/8" (P)	3.55	2.35	0.75
3/8" (M)	3.55	2.35	0.75
1/2" (P)	4.25	2.35	1.08
1/2" (M)	4.25	2.35	1.08

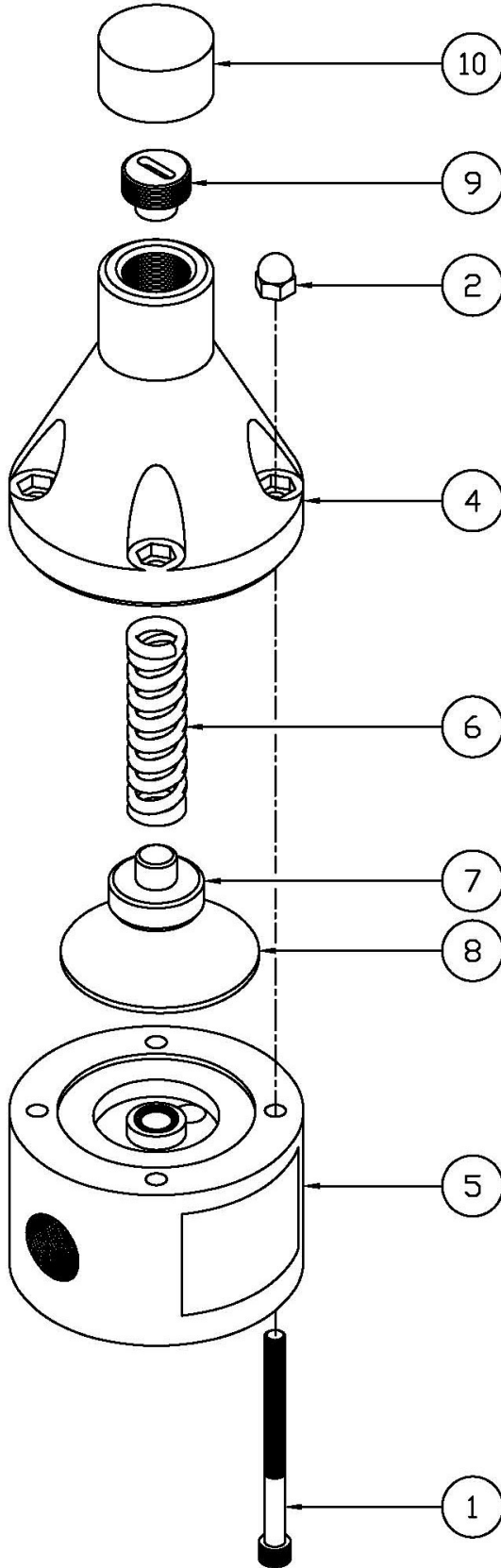
Note: "P" denotes Plastic body type, "M" denotes metal

Warranty:

GRIFFCO Valve, Inc. warrants its products against defects in workmanship or materials for one year under normal use or 18 months from date of shipment whichever occurs first. All obligations and liabilities under this warranty are limited to repair or replacement (at our option), FOB our plant such allegedly defective units as are returned to our factory transport prepaid. Repairs or replacements are made subject to inspection of returned items.

This warranty does not extend to damage by corrosion or erosion. The materials of construction offered are recommendations subject in all cases to acceptance by the customer. These recommendations, based on previous experience and best available information, do not constitute guarantees against wear or chemical action. Expressly excluded from this warranty are defects caused by misuse, abuse or improper application, installation or operation of the unit. No liability for consequential damages or reinstallation labor is accepted. **GRIFFCO Valve, Inc.** will not assume responsibility for contingent liability for alleged failure of its products.

PARTS LIST



ITEM	DESCRIPTION	PART #	
1	10/32 X 2 1/2" Bolt - M-Series 1/2+Plastic Valves	PV-00113	
	10/32 X 1 3/4 Bolt - M-Series 1/4+ 3/8+Plastic Valves	PV-00106	
	10/32 X 3/4" Bolt - M-Series Metal Valves	PV-00107	
2	10/32 Cap Nut - SS	PV-00201	
3	10/32 Flat Washer (For Metal Valves with Metal tops)	PV-00301	
4	1/4+- 1/2+Valve Top . Noryl. Black	PV-004040	
	1/2" . External Adjustment Valve Top . PVC (Tiberian)	PV-004029	
	1/4+- 1/2+Valve Top - 316 SS	PV-00403	
		BPV #	PRV #
5	1/4+Valve Body PVC	BPM-00501	PRM-00501
	1/4" Valve Body PP	BPM-00502	PRM-00502
	1/4+Valve Body PTFE	BPM-00503	PRM-00503
	1/4+Valve Body PVDF	BPM-00504	PRM-00504
	1/4+Valve Body 316 SS	BPV-00505	PRV-00505
	1/4+Valve Body Alloy 20	BPV-00506	PRV-00506
	1/4+Valve Body Hast C	BPV-00507	PRV-00507
	1/4" Valve Body CPVC	BPM-00508	PRM-00508
	3/8+Valve Body PVC	BPM-00561	PRM-00561
	3/8+Valve Body PP	BPM-00562	PRM-00562
	3/8+Valve Body PTFE	BPM-00563	PRM-00563
	3/8+Valve Body PVDF	BPM-00564	PRM-00564
	3/8+Valve Body 316 SS	BPV-00565	PRV-00565
	3/8+Valve Body Alloy 20	BPV-00566	PRV-00566
	3/8+Valve Body Hast C	BPV-00567	PRV-00567
	3/8+Valve Body CPVC	BPM-00568	PRM-00568
	1/2+ Valve Body PVC	BPM-00511	PRM-00511
	1/2+ Valve Body PP	BPM-00512	PRM-00512
	1/2+ Valve Body PTFE	BPM-00513	PRM-00513
	1/2+ Valve Body PVDF	BPM-00514	PRM-00514
1/2+ Valve Body 316 SS	BPV-00515	PRV-00515	
1/2+ Valve Body Alloy 20	BPV-00516	PRV-00516	
1/2+ Valve Body Hast C	BPV-00517	PRV-00517	
1/2+ Valve Body CPVC	BPM-00518	PRM-00518	
6	Pressure Spring - 1/4+- 1/2+Valve; 150 psi	PV-00601	
	Pressure Spring - 1/4+- 1/2+Valve; 50 psi	PV-006011	
	Pressure Spring - 1/4+- 1/2+Valve; 250 psi	PV-006013	
	Pressure Spring - 1/4+- 1/2+Valve; 350 psi (Metal Valves w/Metal tops)	PV-006012	
	Pressure Spring - 1/4+- 1/2+Valve; 100 psi, 316 SS	PV-00601S	
7	Support Disc - 1/4+- 1/2+ Valve, PVC	PV-00701	
	Support Disc - 1/4+- 1/2+ Valve, 316 SS	PV-00702	
8	Diaphragm - 1/4+- 1/2+Valve - PTFE / EPDM	PV-00800	
	Diaphragm - 1/4+- 1/2+Valve . Viton	PV-00802	
	Diaphragm - 1/4+- 1/2+Valve - PTFE / Viton (High Temperature)	PV-00803	
9	Adjustment Screw - 1/4+- 1/2+Valve PET (White)	PV-00906	
	Adjustment Screw - 1/4+- 1/2+Valve Coated Steel	PV-00903	
10	Protective Vinyl Cap . Small (For Valves w/ OSS & MSS options)	PV-01001	
	Protective Vinyl Cap . X-small	PV-010011	