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T-Series Instruction Manual

Back Pressure Valves
Pressure Relief Valves

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INST1002-2008

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 0 - 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 form 0 - 150 psi via the tamper resistant screw in the top of the valve.

INSTALLATION

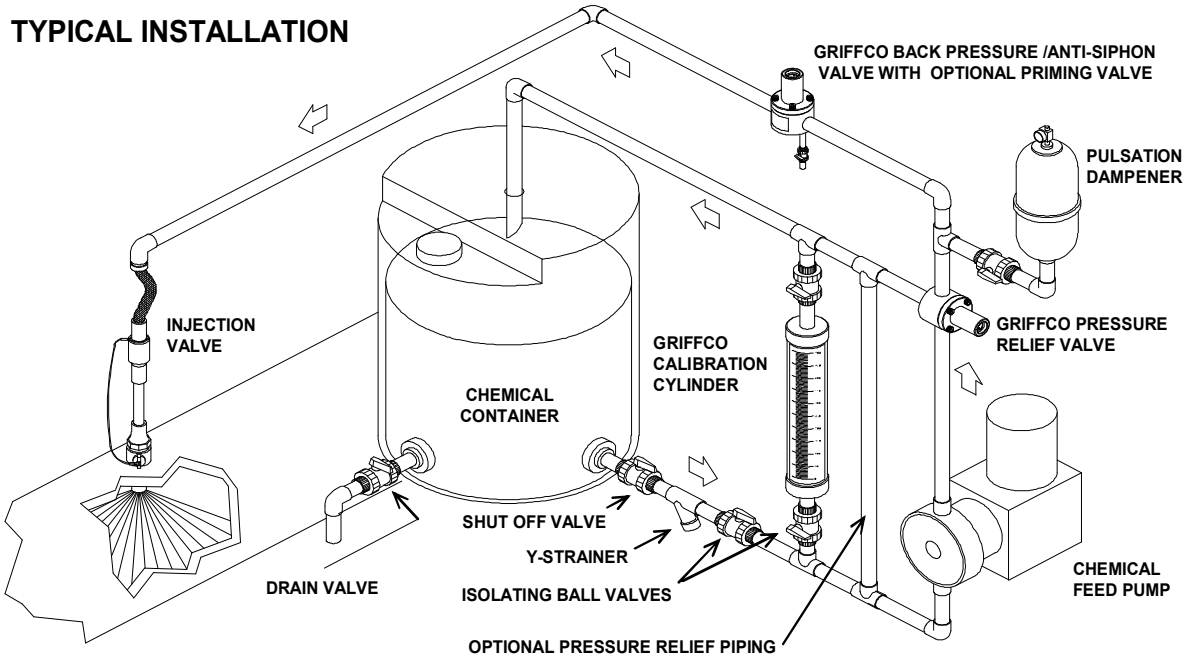
Back Pressure Valve:
Generally, the back pressure valve can be installed anywhere in the discharge line, provided there is some downstream pressure at the dosage point. If there is no downstream pressure the back pressure valve should be installed at the dosage point to prevent siphoning and drainage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

TYPICAL INSTALLATION



MAINTENANCE:

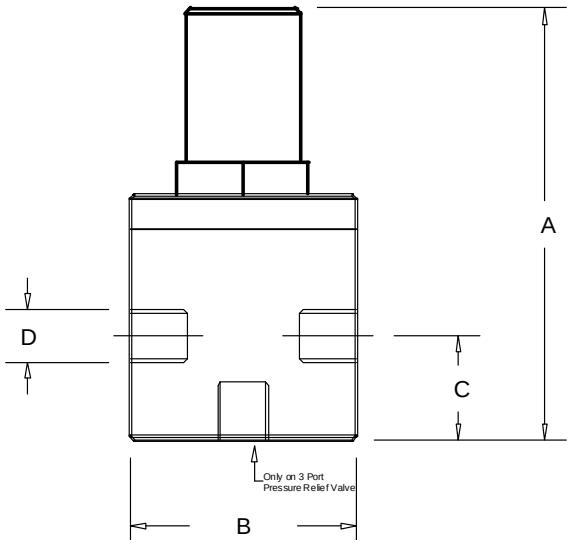
The pressure relief and back pressure valves were designed with minimizing the amount of maintenance required to keep the valves in operation. However, periodic replacement of the diaphragm is required. To facilitate inspection and replacement, the valve layout is such that removal of the diaphragm can 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 adjuster to remove the pressure from the diaphragm. Unthread the valve top and lift off. After the diaphragm has been inspected and replaced if necessary check the adjustment spring. Make sure there is no rust or corrosion. Replaced the spring if necessary. Place the spring and support disc onto the valve, then thread the valve top back over the valve body. Hand snug then tighten 1/8 of a turn. (appx. 25 ft/lbs)

Screw in the djustment screw 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:

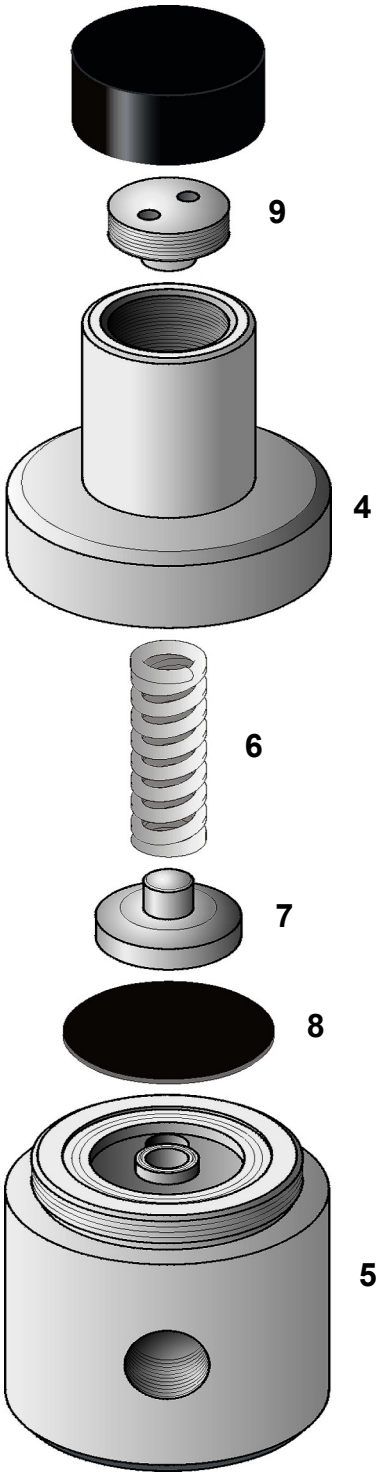


D	A (in)	B (in)	C (in)
1/4" (P)	3.90	2.340	0.750
1/4" (M)	3.50	2.340	0.750
3/8" (P)	3.90	2.340	0.750
3/8" (M)	3.50	2.340	0.750
1/2" (P)	4.60	2.340	0.750
1/2" (M)	4.20	2.340	0.750

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 out 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	BPV #	PART #
1	10/32 x 3/4ò- Bolt ï SS (Metal Valves only)		PV-00107
2	10/32 Cap Nut - SS (Only used on PRTA Valves)		PV-00201
3	10/32 Flat Washer ï SS (Metal Valves only)		PV-00301
4	1/4ò- 1/2òValve Top ï Noryl. Black (Metal Valves) 1/4ò- 1/2òValve Top ï Noryl, Orange (Metal Valves) 1/4ò- 1/2òValve Top ï Noryl, Yellow (Metal Valves) 1/4ò- 1/2òValve Top ï Noryl, Green (Metal Valves) 1/4ò- 1/2òValve Top ï Noryl, Grey (Metal Valves) 1/4ò- 1/2òValve Top ï Noryl. Black (Plastic Valves) 1/4ò- 1/2òValve Top ï Noryl, Orange (Plastic Valves) 1/4ò- 1/2òValve Top ï Noryl, Yellow (Plastic Valves) 1/4ò- 1/2òValve Top ï Noryl, Green (Plastic Valves) 1/4ò- 1/2òValve Top ï Noryl, Grey (Plastic Valves) 1/4ò- 1/2òValve Top - 316 SS		PV-004011 PV-004012 PV-004013 PV-004014 PV-004015 PV-004024 PV-004026 PV-004027 PV-004028 PV-004029 PV-00403
		BPV #	**PRV #**
5	1/4òValve Body PVC 1/4" Valve Body PP 1/4òValve Body PTFE 1/4òValve Body PVDF 1/4òValve Body 316 SS 1/4òValve Body Alloy 20 1/4òValve Body Hast C 1/4" Valve Body CPVC 3/8òValve Body PVC 3/8òValve Body PP 3/8òValve Body PTFE 3/8òValve Body PVDF 3/8òValve Body 316 SS 3/8òValve Body Alloy 20 3/8òValve Body Hast C 3/8òValve Body CPVC 1/2ò Valve Body PVC 1/2ò Valve Body PP 1/2ò Valve Body PTFE 1/2ò Valve Body PVDF 1/2ò Valve Body 316 SS 1/2ò Valve Body Alloy 20 1/2ò Valve Body Hast C 1/2ò Valve Body CPVC	BPV-005011 BPV-005021 BPV-005031 BPV-005041 BPV-00505 BPV-00506 BPV-00507 BPV-005081 BPV-005611 BPV-005621 BPV-005631 BPV-005641 BPV-00565 BPV-00566 BPV-00567 BPV-005681 BPV-005111 BPV-005121 BPV-005131 BPV-005141 BPV-005151 BPV-005161 BPV-005171 BPV-005181	PRV-005011 PRV-005021 PRV-005031 PRV-005041 PRV-00505 PRV-00506 PRV-00507 PRV-005081 PRV-005611 PRV-005621 PRV-005631 PRV-005641 PRV-00565 PRV-00566 PRV-00567 PRV-005681 PRV-005111 PRV-005121 PRV-005131 PRV-005141 PRV-005151 PRV-005161 PRV-005171 PRV-005181
6	Pressure Spring - 1/4ò- 1/2òValve; 150 psi Pressure Spring - 1/4ò- 1/2òValve; 50 psi Pressure Spring - 1/4ò- 1/2òValve; 250 psi Pressure Spring - 1/4ò- 1/2òValve; 350 psi Pressure Spring - 1/4ò- 1/2òValve; 100 psi, 316 SS		PV-00601 PV-006011 PV-006013 PV-006012 PV-00601S
7	Support Disc - 1/4ò- 1/2ò Valve, PVC Support Disc - 1/4ò- 1/2ò Valve, 316 SS		PV-00701 PV-00702
8	Diaphragm - 1/4ò- 1/2òValve - PTFE / EPDM Diaphragm - 1/4ò- 1/2òValve ï Viton Diaphragm - 1/4ò- 1/2òValve - PTFE / Viton (High Temperature)		PV-00800 PV-00802 PV-00803
9	Adjustment Screw - 1/4ò- 1/2òValve Noryl Adjustment Screw - 1/4ò- 1/2òValve Coated Steel		PV-00905 PV-00901
	Protective Vinyl Cap		PV-01001