

Griffco Valve Inc.

3 North Main Street
Middleport, NY 14105
Phone: 1 800-474-3326
FAX: 1 716-735-6202

Instruction Manual

Back Pressure Valves Pressure Relief Valves

Call 1 - 800 - GRIFFCO

INS 1002-2003



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 antisiphon valve. The diaphragm is held against the seat by the internal spring. Back pressure is adjustable from 0 - 150 psi via the tamper resistant 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 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.

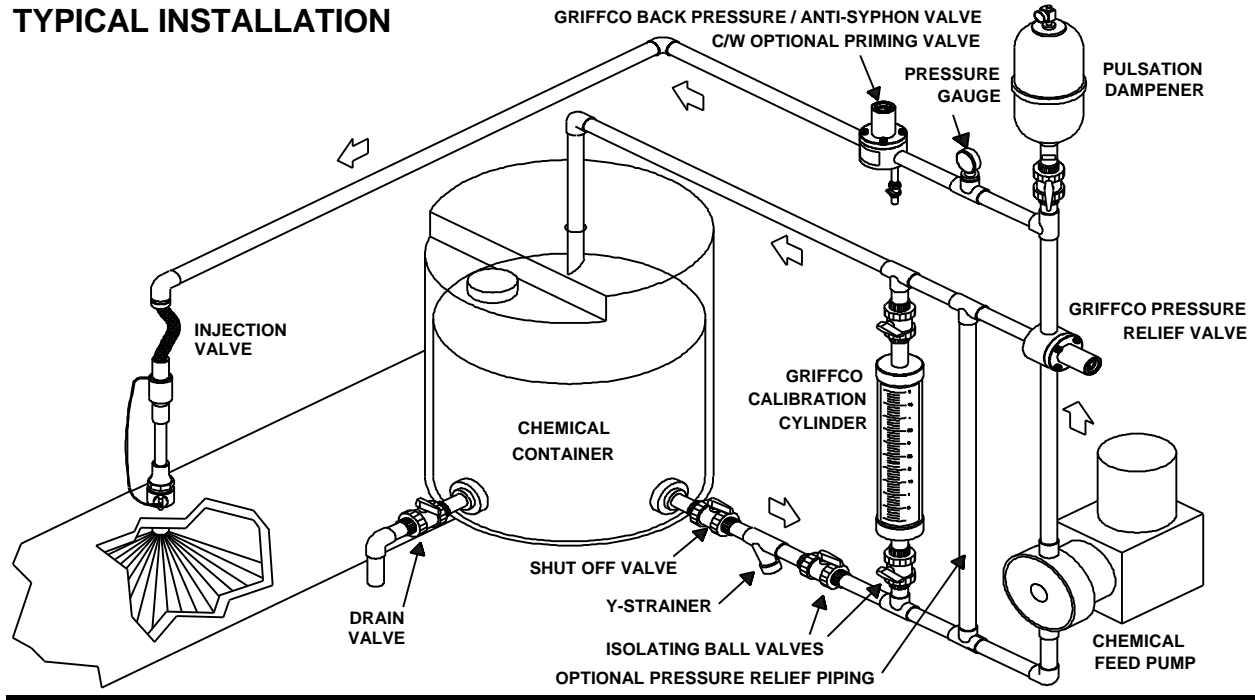
Back pressure valve performance will be enhanced with the installation of a pulsation dampener to smooth out the discharge / suction cycles of the pump. Thus, the diaphragm is free to float inside the valve chamber, minimising the wear on the stress points of the diaphragm. For many low pressure applications dampeners without diaphragms are acceptable. These pulsation dampeners should be sized at 12 - 15 times the dosage volume of the pump head. For some 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.

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.

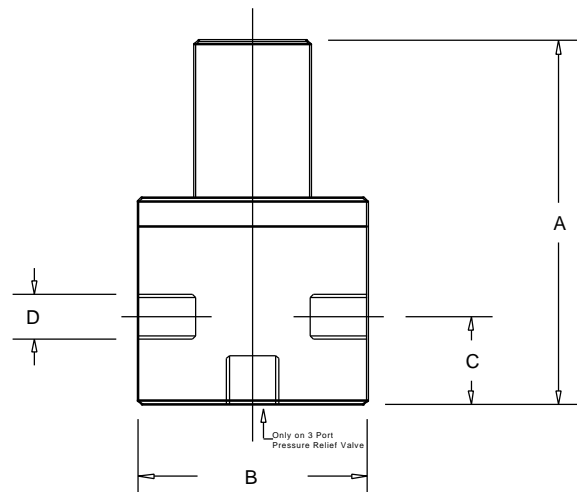
Caution: Ensure the system is not under pressure and that the chemical lines are flushed with water before disassembly.

Unscrew the pressure adjustment screw to remove the pressure from the diaphragm. Remove the 4 cap nuts and lift off the valve top. (On T-Series valves unscrew the valve top)

After the diaphragm and the valve seat have been inspected and replaced if necessary check the adjustment spring. Make sure there is no rust or corrosion. Replaced the spring and the spring bumper into the valve top and slide the top back over the four bolts. (On T-Series valves thread the valve top to the valve body)

Snug down the four cap nuts. (On T-Series – Snug hand tight then tighten ¼ turn) Screw in the tension adjuster 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. Pressure can be increased by turning the pressure adjustment screw clockwise.

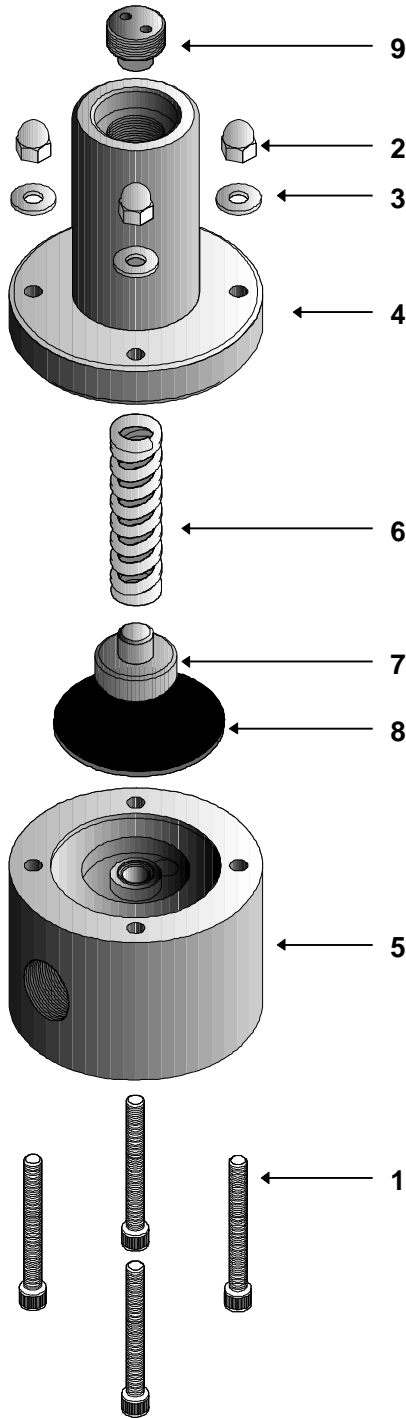
DIMENSIONS:



D	A	B	C
1/4"	3.50	2.375	0.750
3/8"	3.50	2.375	0.750
1/2" T-Series	4.60	2.375	1.125
1/2"	5.50	3.50	1.125
3/4"	5.50	3.50	1.125
1"	6.25	3.50	1.375
1 1/2"	9.00	4.50	2.10
2"	9.00	5.00	2.10

NOTE: Dimensions are general. See dimension sheets for exact sizes of various material valves.

PARTS LIST



ITEM	DESCRIPTION	PART #
1	Bolt - 1/2 - 1" Plastic Valves - ¼ - 20 X 2 ¾" Bolt - 1 1/2" - 2" Metal Valves - 5/16 - 18 X 1 ½" Bolt - 1 1/2" - 2" Plastic Valves - 5/16 - 18 X 5" Bolt - 1/4" Plastic Valves - 10/32 x 1 ¾" Bolt - 1/4" Metal Valves - 10/32 X ¾" Bolt - 1/2 - 1" Metal Valves - ¼ - 20 x 1 ½"	PV-00101 PV-00102 PV-00105 PV-00106 PV-00107 PV-00108
2	10/32 Cap hex nut 1/4 - 20 Cap hex nut 5/16 - 18 Cap hex nut	PV-00201 PV-00202 PV-00203
3	10/32 Flat washer 1/4 Flat washer 5/16 Flat washer	PV-00301 PV-00302 PV-00303
4	1/4" - 3/8" & T-Series Alloy Valve Top, Bolted - PVC, Grey 1/4" - 3/8" & T-Series Alloy Valve Top, Bolted - PVC, Orange 1/4" - 3/8" & T-Series Alloy Valve Top, Bolted - PVC, Yellow 1/4" - 3/8" & T-Series Alloy Valve Top, Bolted - PVC, Green 1/4" - 3/8" & 1/2" T-Series Valve Top, Threaded - PVC, Grey 1/4" - 3/8" & 1/2" T-Series Valve Top, Threaded - PVC, Orange 1/4" - 3/8" & 1/2" T-Series Valve Top, Threaded - PVC, Yellow 1/4" - 3/8" & 1/2" T-Series Valve Top, Threaded - PVC, Green 1/2" - External Adjustment Valve Top - PVC(Tiberian) 1/4" - 3/8" & T-Series Alloy Valve Top - Coated Steel 1/4" - 3/8" & T-Series Alloy Valve Top - 316 SS 1/2" - 1" Valve Top - PVC, Grey 1/2" - 1" Valve Top - PVC, Orange 1/2" - 1" Valve Top - PVC, Yellow 1/2" - 1" Valve Top - PVC, Green 1/2" - 1" Valve Top - CPVC 1/2" - 1" Valve Top - Steel 1/2" - 1" Valve Top - 316 SS 1 1/2" - 2" Valve Top; 5 ½" Valves, PVC 1 1/2" - 2" Valve Top; 5 ½" Valves, Coated Steel 1 1/2" - 2" Valve Top; 5 ½" Valves, 316 SS 1 1/2" Valve Top; 4 ½" Valves, PVC 1 1/2" Valve Top; 4 ½" Valves, Coated Steel 1 1/2" Valve Top; 4 ½" Valves, 316 SS 2" Valve Top; 5" Valves, PVC 2" Valve Top; 5" Valves, Coated Steel 2" Valve Top; 5" Valves, 316 SS	PV-004011 PV-004012 PV-004013 PV-004014 PV-004015 PV-004016 PV-004017 PV-004018 PV-004019 PV-00402 PV-00403 PV-004051 PV-004052 PV-004053 PV-004054 PV-004055 PV-00406 PV-00407 PV-00408 PV-00409 PV-00410 PV-00411 PV-00412 PV-00413 PV-00414 PV-00415 PV-00416
6	Pressure Spring - 1/4" - 3/8" & T-Series Valve; 0 - 150psi Pressure Spring - 1/4" - 3/8" & T-Series Valve; 0 - 50psi Pressure Spring - 1/4" - 3/8" & T-Series Valve; 50 - 350psi Pressure Spring - 1/2" - 1" Valve; 0 - 150psi Pressure Spring - 1/2" - 1" Valve; 0 - 50psi Pressure Spring - 1/2" - 1" Valve; 50 - 350psi Pressure Spring - 1/2" - 1" Valve; 0 - 100psi, 316 SS Pressure Spring - 1 1/2" - 2" Valve	PV-00601 PV-006011 PV-006012 PV-00602 PV-006021 PV-006122 PV-006123 PV-00603
7	Support Disc - 1/4" - 3/8" & T-Series Valve, PP Support Disc - 1/4" - 3/8" & T-Series Valve, 316 SS Support Disc - 1/2 - 1" Valve, PP Support Disc - 1/2 - 1" Valve, 316 SS Support Disc - 1 1/2" - 2" Valve, PP Support Disc - 1 1/2" - 2" Valve, 316 SS	PV-00701 PV-00702 PV-00705 PV-00706 PV-00708 PV-00709
8	Diaphragm - 1/4" - 3/8" & T-Series Valve - PTFE / EPDM Diaphragm - 1/4" - 3/8" & T-Series Valve - Viton Diaphragm - 1/4" - 3/8" & T-Series Valve - PTFE / Viton (High Temp) Diaphragm - 1/2" - 1" Valve - PTFE / EPDM Diaphragm - 1/2" - 1" Valve - Viton Diaphragm - 1/2" - 1" Valve - PTFE / Viton (High Temperature) Diaphragm - 1 1/2" - PTFE / EPDM - 3.25" Diameter Diaphragm - 1 1/2" - Viton - 3.25" Diameter Diaphragm - 2" Valve - 3.5" Diameter Diaphragm - 2" Valve - Viton - 3.5" Diameter	PV-00800 PV-00802 PV-00803 PV-00810 PV-00812 PV-00813 PV-00820 PV-00821 PV-00830 PV-00831
9	Adjustment Screw - 1/4" - 1" Valve PVC Adjustment Screw - 1/4" - 1" Valve PVC, Slotted Adjustment Screw - 1/4" - 1" Valve Coated Steel Adjustment Screw - 1/4" - 1" Valve Coated Steel, Slotted Adjustment Screw - 1 1/2" - 2" Valve PVC Adjustment Screw - 1 1/2" - 2" Valve Coated Steel	PV-00900 PV-00902 PV-00901 PV-00903 PV-00920 PV-00921

ITEM	DESCRIPTION	BPV #	PRV #
5	1/4" Valve Body PVC	BPV-00501	PRV-00501
	1/4" T-Series Valve Body PVC,	BPV-005011	PRV-005011
	1/4" Valve Body PP	BPV-00502	PRV-00502
	1/4" T-Series Valve Body PP	BPV-005021	PRV-005021
	1/4" Valve Body PTFE	BPV-00503	PRV-00503
	1/4" T-Series Valve Body PTFE	BPV-005031	PRV-005031
	1/4" Valve Body PVDF	BPV-00504	PRV-00504
	1/4" T-Series Valve Body PVDF	BPV-005041	PRV-005041
	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	BPV-00508	PRV-00508
	1/4" T-Series Valve Body CPVC	BPV-005081	PRV-005081
	3/8" Valve Body PVC	BPV-00561	PRV-00561
	3/8" T-Series Valve Body PVC,	BPV-005611	PRV-005611
	3/8" Valve Body PP	BPV-00562	PRV-00562
	3/8" T-Series Valve Body PP	BPV-005621	PRV-005621
	1/4" Valve Body PTFE	BPV-00563	PRV-00563
	3/8" T-Series Valve Body PTFE	BPV-005631	PRV-005631
	3/8" Valve Body PVDF	BPV-00564	PRV-00564
	3/8" T-Series Valve Body PVDF	BPV-005641	PRV-005641
	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	BPV-00568	PRV-00568
	3/8" T-Series Valve Body CPVC	BPV-005681	PRV-005681
	1/2" Valve Body PVC	BPV-00511	PRV-00511
	1/2" T-Series Valve Body PVC	BPV-005111	PRV-005111
	1/2" Valve Body PP	BPV-00512	PRV-00512
	1/2" T-Series Valve Body PP	BPV-005121	PRV-005121
	1/2" Valve Body PTFE	BPV-00513	PRV-00513
	1/2" T-Series Valve Body PTFE	BPV-005131	PRV-005131
	1/2" Valve Body PVDF	BPV-00514	PRV-00514
	1/2" T-Series Valve Body PVDF	BPV-005141	PRV-005141
	1/2" Valve Body 316 SS	BPV-00515	PRV-00515
	1/2" T-Series Valve Body 316 SS	BPV-005151	PRV-005151
	1/2" Valve Body Alloy 20	BPV-00516	PRV-00516
	1/2" T-Series Valve Body Alloy 20	BPV-005161	PRV-005161
	1/2" Valve Body Hast C	BPV-00517	PRV-00517
	1/2" T-Series Valve Body Hast C	BPV-005171	PRV-005171
	1/2" Valve Body CPVC	BPV-00518	PRV-00518
	1/2" T-Series Valve Body CPVC	BPV-005181	PRV-005181
	3/4" Valve Body PVC	BPV-00521	PRV-00521
	3/4" Valve Body PP	BPV-00522	PRV-00522
	3/4" Valve Body PTFE	BPV-00523	PRV-00523
	3/4" Valve Body PVDF	BPV-00524	PRV-00524
	3/4" Valve Body 316 SS	BPV-00525	PRV-00525
	3/4" Valve Body Alloy 20	BPV-00526	PRV-00526
	3/4" Valve Body Hast C	BPV-00527	PRV-00527
	3/4" Valve Body CPVC	BPV-00528	PRV-00528
	1" Valve Body PVC	BPV-00531	PRV-00531
	1" Valve Body PP	BPV-00532	PRV-00532
	1" Valve Body PTFE	BPV-00533	PRV-00533
	1" Valve Body PVDF	BPV-00534	PRV-00534
	1" Valve Body 316 SS	BPV-00535	PRV-00535
	1" Valve Body Alloy 20	BPV-00536	PRV-00536
	1" Valve Body Hast C	BPV-00537	PRV-00537
	1" Valve Body CPVC	BPV-00538	PRV-00538
	1 1/2" Valve Body PVC	BPV-00541	PRV-00541
	1 1/2" Valve Body PP	BPV-00542	PRV-00542
1 1/2" Valve Body PTFE	BPV-00543	PRV-00543	
1 1/2" Valve Body PVDF	BPV-00544	PRV-00544	
1 1/2" Valve Body 316 SS	BPV-00545	PRV-00545	
1 1/2" Valve Body Alloy 20	BPV-00546	PRV-00546	
1 1/2" Valve Body Hast C	BPV-00547	PRV-00547	
1 1/2" Valve Body CPVC	BPV-00548	PRV-00548	
2" Valve Body PVC	BPV-00551	PRV-00551	
2" Valve Body PP	BPV-00552	PRV-00552	
2" Valve Body PTFE	BPV-00553	PRV-00553	
2" Valve Body PVDF	BPV-00554	PRV-00554	
2" Valve Body 316 SS	BPV-00555	PRV-00555	
2" Valve Body Alloy 20	BPV-00556	PRV-00556	
2" Valve Body Hast C	BPV-00557	PRV-00557	
2" Valve Body CPVC	BPV-00558	PRV-00558	