

ACCU-VENT

Automatic Degassing Valve

Instruction Manual

Rev. 0
03/22

Please note:

This instruction manual provides detailed information and instructions that must be read, understood and followed to ensure that the equipment is installed, operated and serviced in an appropriate manner. Failure to do so before using may result in hazardous consequences and/or improper operation.

Temperature limit notation: If the application in which this valve is to be installed has a temperature greater than **73°F (23°C)** including radiant heat, refer to page 4 for temperature correction Vs pressure limits.

Manufactured by:



PRIMARY FLUID SYSTEMS INC. 1050 Cooke Blvd., Burlington, Ontario, L7T 4A8
Tel: (905) 333-8743 Fax: (905) 333-8746

Call Toll Free: 1-800-776-6580

www.primaryfluid.com

primary@primaryfluid.com

Introduction

The following instructions provide information on the installation, operation and maintenance of ACCU-VENT, automatic degassing valves, manufactured by Primary Fluid Systems Inc. The valves are designed to improve the performance and safe operation of most pumps used for metering applications.

The standard valve assembly is constructed of CPVC (Corzan) wetted parts, for use specifically with Sodium Hypochlorite, Sulfuric Acid to 98% and Hydrogen Peroxide to 30%. Alternative material options include 316L Stainless Steel and PVDF.

The automatic degassing valve's maximum working pressure is dependent on the model. Models with a ¼" connection are pressure rated to 150 PSIG. CPVC and PVDF models in ½", ¾", or 1" connection are pressure rated to 232 PSIG. All Stainless Steel models are pressure rated to 250 PSIG.

Special Features of the ACCU-VENT Assembly:

- CPVC corrosion resistant wetted materials of construction
- Special material designed float automatically vents built up gases on system start-up and under working pressure
- Can be used on feed side or discharge side of pump (or both)
- Std. 1/2" NPT threaded connections or optional ¼", ¾", and 1" NPT connection, including socketweld and BSPT
- Available in other materials of construction for various gaseous liquid chemicals

Automatic Degassing Valve:

Our standard automatic degassing valves are designed to automatically vent gases and vapors that are commonly released from Sodium Hypochlorite or Hydrogen Peroxide. Gases or vapor are compressible, and if not vented cause what is known as vapor lock in your metering pump and the system, causing the metering pump to malfunction and in most cases cause the pump to stop discharging chemical to the system.

The valve is designed to allow for the venting of gases and condensed vapor back to the feed tank, which improves priming on initial start-ups and continuous trouble free operation while working under pressure.

The valve when in operation vents gases, vapor and a small amount of liquid, which is the same as the chemical being pumped. This discharge must be returned through hard piping or tubing back to tank, to prevent personnel or equipment from coming in contact with vented corrosive fluid.

Caution:

It is recommended that the automatic vent discharge be piped back to tank through the use of hard pipe or tubing. Failure to do so could result in hazardous consequences. (see typical installation)

Automatic Degassing Valves: Reason for Selection and Use

Metering pumps handling chemicals such as Sodium Hypochlorite or Hydrogen Peroxide, will always be subject to the problem of venting off a build up of gases inherent to these chemicals. Some metering pumps are available with a built in degassing valve, but these are either a manual arrangement requiring constant monitoring and physical adjustment, or based on a constant bypass through a fixed orifice, which reduces pump discharge and efficiency. Our automatic degassing valve vents off any build up of gases through the use of a special float mechanism, which senses the gas and opens the discharge vent allowing the gas and vapor to escape back to tank. When the float senses liquid, the valve automatically closes the discharge port, blocking liquid from venting back to tank.

Installation and Maintenance of automatic degassing valves:

Automatic degassing valves are installed on the suction and/or discharge line of the pump. The valve assembly should be located at the highest point and at the first 90° turn in the line. (See Typical Installations drawing) The assembly must be kept in a vertical position to allow the valve to function properly. The discharge vent, located at the top of the degassing valve **must** be piped back to the feed tank using tubing or compatible chemical resistant piping for the chemical being handled.

When used in conjunction with a pressure relief valve, always locate the automatic degassing valve on the downstream side of the relief valve.

The automatic degassing valve is designed to function with only the following periodic maintenance:

- Ensure that the discharge vent is clear of any chemical material that may have crystallized. This crystallization may form when the pump is off for a period of time. The liquid chemical in the line will evaporate and form crystals. This may cause the valve to be held in the closed position, and restrict its function.
(If this happens, flush the discharge vent opening with water to clear crystals)

Caution: Always when working on piping, tubing and valves ensure proper protective equipment is worn and the line and valve has been depressurized.

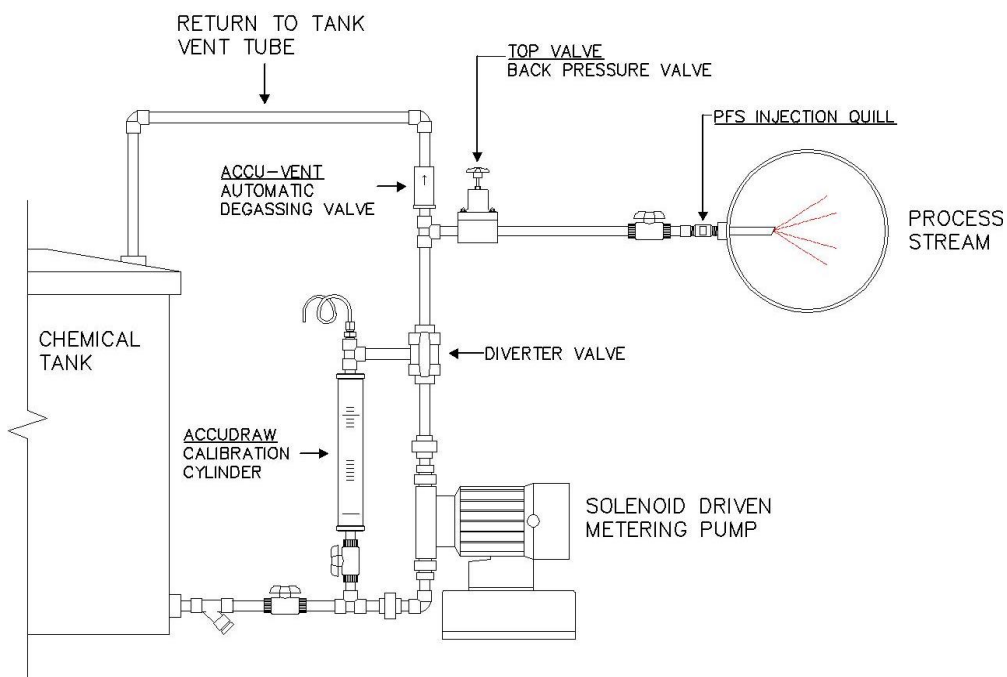
Typical Installations

The proper design of the chemical feed system is critical to ensuring proper function and to avoid the creation of gassing due to piping design. This includes such factors as avoiding suction lift to the chemical dosing pumps with positive feed from the supply tanks, and ensuring proper suction piping to reduce frictional line loss to the pump head.

Note: Installation of the AccuVent too close to the pump may cause erratic function.

The installation below is a typical installation example only. Consult your engineering department for the appropriate installation for your application or call the factory for advice.

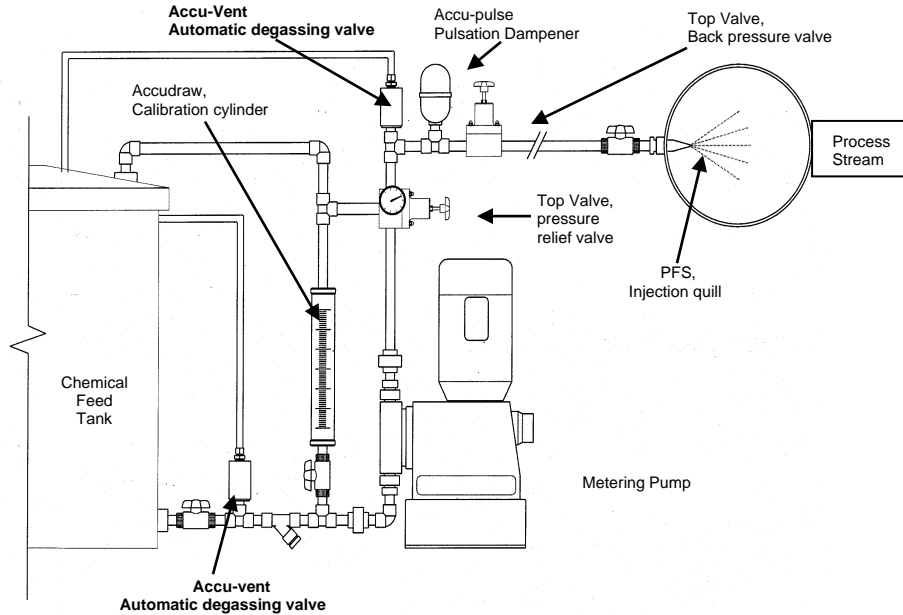
Example A: Solenoid Driven Pumps Rated Under 150 psig.



Typical Installations

The installation below is a typical installation example only. Consult your engineering department for the appropriate installation for your application or call the factory for advice.

Example B: System arrangement for solenoid driven (above 150 psig) or motor driven Pumps, with highly recommended flooded suction conditions.



TEMPERATURE EFFECTS: Thermoplastics and thermosets will decrease in tensile strength as the temperature increases; therefore, the working pressure must be reduced accordingly. The following factors will apply:

Note: If the material of the valve you have chosen is rated below the working pressure of your system than you must reconsider your choice. The standard valve material of construction is CPVC (Corzan) and should be taken into temperature consideration.

(Other materials of construction are available, consult price list or factory)

Note: When considering working temperature include ambient and potential collective surface temperature (Radiant Heat)

Temperature Correction Factors Thermoplastics

F	C	PVC	CPVC	PP	PVDF
70	21	1.00	1.00	1.00	1.00
80	27	0.90	0.96	0.97	0.95
90	32	0.75	0.92	0.91	0.87
100	38	0.62	0.85	0.85	0.80
110	43	0.50	0.77	0.80	0.75
115	46	0.45	0.74	0.77	0.71
120	49	0.40	0.70	0.75	0.68
125	52	0.35	0.66	0.71	0.66
130	54	0.30	0.62	0.68	0.62
140	60	0.22	0.55	0.65	0.58
150	66	NR	0.47	0.57	0.52
160	71	NR	0.40	0.50	0.49
170	77	NR	0.32	0.26	0.45
180	82	NR	0.25	*	0.42
200	93	NR	0.18	NR	0.36
210	99	NR	0.15	NR	0.33
240	116	NR	NR	NR	0.25
280	138	NR	NR	NR	0.18

NR = Not Recommended

* = Recommended for continuous drainage pressure only

Example:

Working ambient and fluid conditions
100°F (38°C)

Valve pressure rating 150 PSIG

PVC Factor at 100°F = 0.62

150 x .62 = 93

Valve is de-rated to **93 PSIG**

Suitable for application