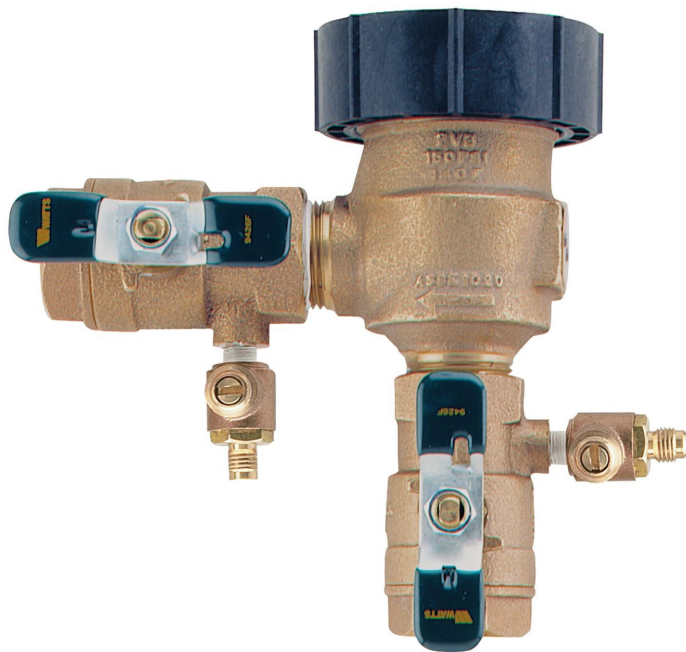
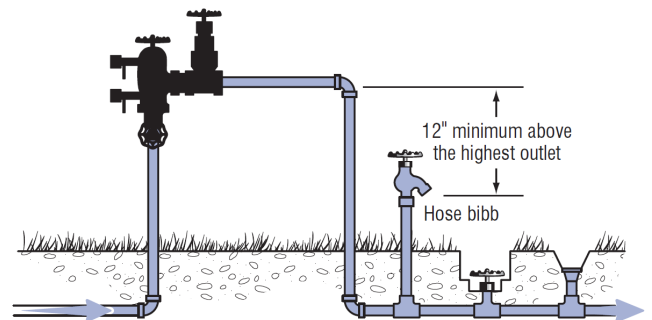
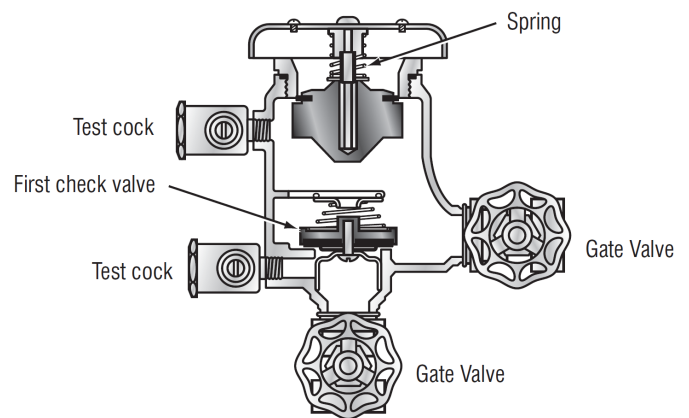


## PVB: Pressure Vacuum Breaker



*Example for illustrative purposes only.  
Valves differ by model and manufacturer.*

Pressure vacuum breaker



### Mechanical Description:

An assembly containing an independently operating internally loaded check valve and an independently operating loaded air inlet valve located on the discharge side of the check valve. The assembly is to be equipped with properly located resilient seated test cocks and tightly closing resilient seated shutoff valves attached at each end of the assembly.

### Applications:

Irrigation systems, industrial systems, agricultural systems, and isolation protection.

### Limitations:

Not recommended against backpressure.

### Installation Guidelines:

A pressure vacuum breaker must be installed at least twelve inches above all downstream piping and outlets. The critical level (C/L) of the valve shall be the bottom of the valve body unless otherwise indicated. Must be installed where access for testing is feasible, safe and while in service. Supplied valves are part of the approved assembly.

### Protection:

A pressure vacuum breaker is designed to protect against a non-health hazard (i.e., pollutant) or a health hazard (i.e., contaminant) under a backsiphonage condition only.

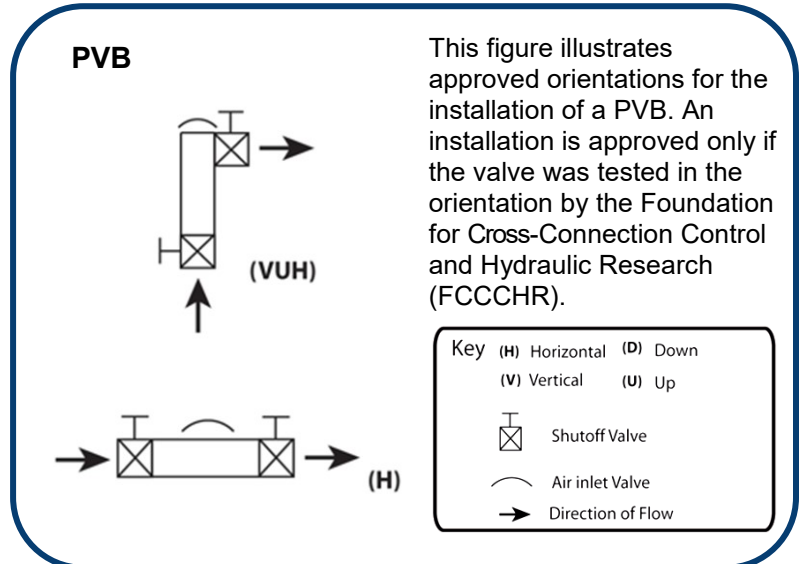
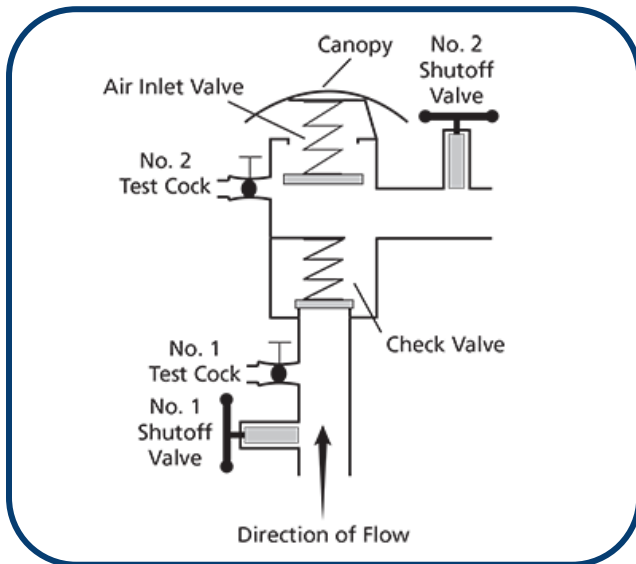
### Hazard Rating:

Health hazards and non-health hazards.

### Pressure Condition:

Assembly may be subjected to continuous pressure and may have downstream valves.

## Hydraulics, Orientation and Rule Requirements



This figure illustrates approved orientations for the installation of a PVB. An installation is approved only if the valve was tested in the orientation by the Foundation for Cross-Connection Control and Hydraulic Research (FCCCHR).

Key	(H) Horizontal	(D) Down
	(V) Vertical	(U) Up
		Shutoff Valve
		Air inlet Valve
		Direction of Flow

### Requirements for Public Water Supplies:

As mandated by the federal Safe Drinking Water Act, water suppliers are responsible for ensuring that the water they supply meets federal primary drinking water regulations and is delivered to consumers without compromising water quality due to its distribution system. Water utilities may want to implement a cross connection program to stave off any problems that could occur.

Mechanical backflow preventers have internal seals, springs, and moving parts that are subject to fouling, wear, or fatigue. Also, mechanical backflow preventers and air gaps can be bypassed. Therefore, all backflow preventers have to be tested periodically to ensure that they are functioning properly. A visual check of air gaps is sufficient, but mechanical backflow preventers have to be tested with properly calibrated gauge equipment by a certified individual.

### Administrative Rules of Montana:

#### 17.38.305 CROSS-CONNECTIONS: REGULATORY REQUIREMENTS

(1) A cross-connection on a public water supply system must be eliminated by the disconnection of the cross-connection whenever reasonably practicable. Whenever elimination of a cross-connection is not reasonably practicable and the cross-connection creates a health or non-health hazard, the hazard must be eliminated by the insertion into the piping of an approved backflow prevention assembly or device.

### Additional Resources:

Administrative Rules of Montana: Cross-Connections in Drinking Water 17.38.301—312 <http://www.mtrules.org>

American Backflow Prevention Association <https://abpa.site-ym.com/>

Environmental Protection Agency Cross Connection Control Manual (2003) <http://nepis.epa.gov>

Foundation for Cross-Connection Control and Hydraulic Research <https://fccchr.usc.edu/introduction.html>

### Montana Department of Environmental Quality

#### Public Water Supply Bureau

Telephone: (406) 444-4400

Website: <http://deq.mt.gov/water/drinkingwater>

DEQ Contacts: <https://directory.mt.gov/govt/state-dir/agency/deq>