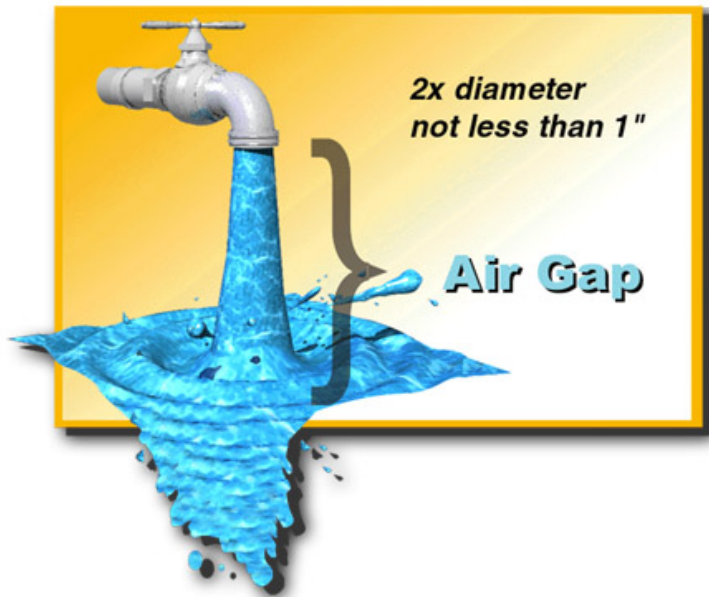
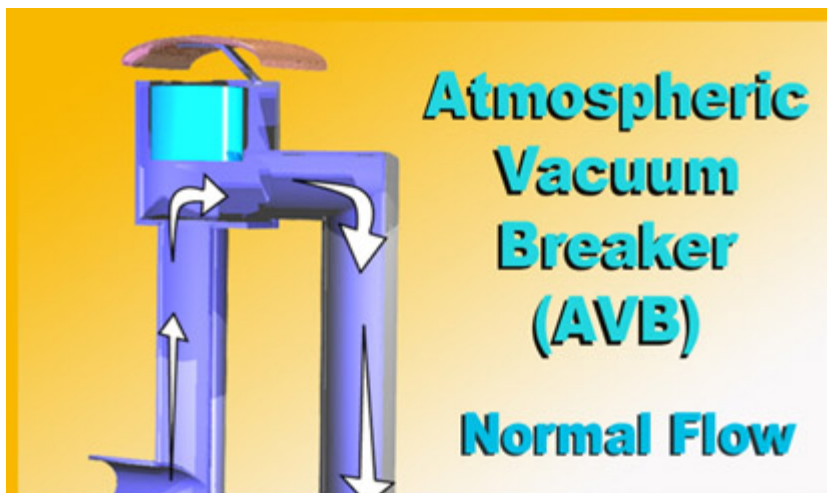


Backflow Preventers

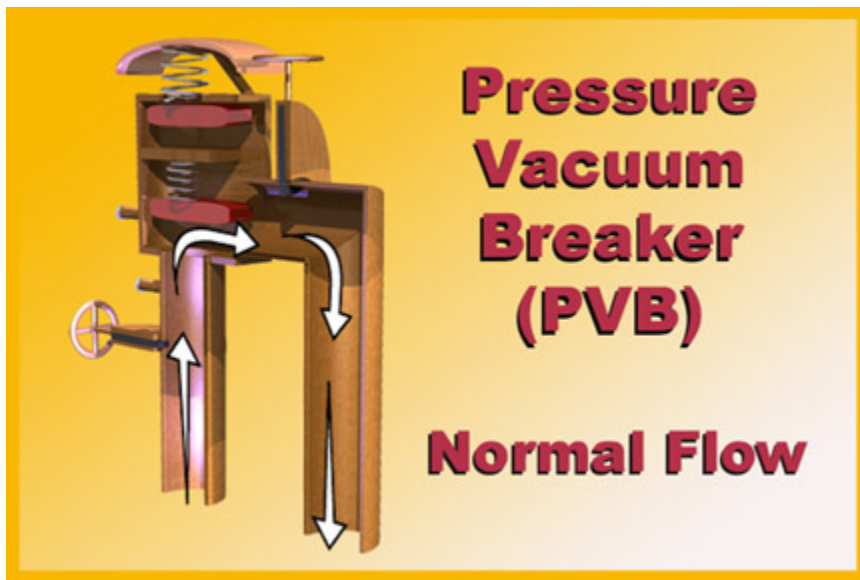
Air Gap



An Air Gap is a physical separation of the supply pipe by at least two pipe diameters (never less than one inch) vertically above the overflow rim of the receiving vessel. In this case line pressure is lost. Therefore, a booster pump is usually needed downstream, unless the flow of the water by gravity is sufficient for the water use. With an air gap there is no direct connection between the supply main and the equipment. An air gap may be used to protect against a contaminant or a pollutant, and will protect against both backsiphonage and backpressure. An air gap is the only acceptable means of protecting against lethal hazards.

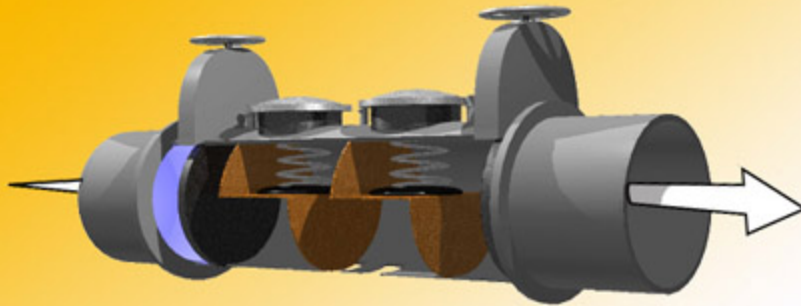


The AVB is always placed downstream from all shut-off valves. Its air inlet valve closes when the water flows in the normal direction. But, as water ceases to flow the air inlet valve opens, thus interrupting the possible backsiphonage effect. If piping or a hose is attached to this assembly and run to a point of higher elevation, the backpressure will keep the air inlet valve closed because of the pressure created by the elevation of water. Hence, it would not provide the intended protection. Therefore, this type of assembly must always be installed at least six (6) inches above all downstream piping and outlets. Additionally, this assembly may not have shut-off valves or obstructions downstream. A shut-off valve would keep the assembly under pressure and allow the air inlet valve (or float check) to seal against the air inlet port, thus causing the assembly to act as an elbow, not a backflow preventer. The AVB may not be under continuous pressure for this same reason. An AVB must not be used for more than twelve (12) out of any twenty-four (24) hour period. It may be used to protect against either a pollutant or a contaminant, but may only be used to protect against a backsiphonage condition.



The PVB includes a check valve which is designed to close with the aid of a spring when flow stops. It also has an air inlet valve which is designed to open when the internal pressure is one psi above atmospheric pressure so that no non-potable liquid may be siphoned back into the potable water system. Being spring loaded it does not rely upon gravity as does the atmospheric vacuum breaker. This assembly includes resilient seated shut-off valves and testcocks. The PVB must be installed at least twelve (12) inches above all downstream piping and outlets. The PVB may be used to protect against a pollutant or contaminant, however, it may only be used to protect against backsiphonage. It is not acceptable protection against backpressure.

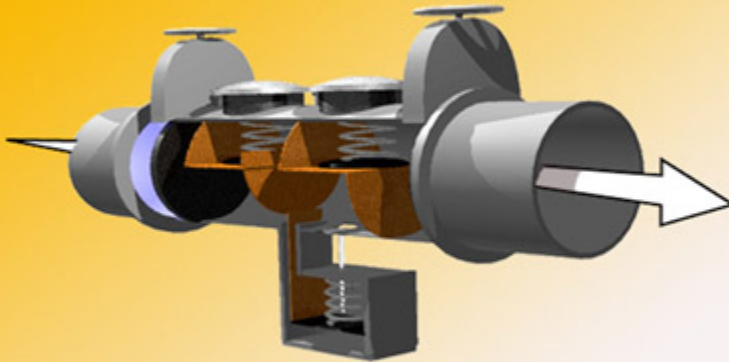
Double Check Valve Assembly (DC)



Normal Flow

The Double Check Valve Assembly consists of two internally loaded, independently operating check valves together with tightly closing resilient seated shut-off valves upstream and downstream of the check valves. Additionally, there are resilient seated testcocks for testing of the assembly. The DC may be used to protect against a pollutant only. However, this assembly is suitable for protection against either backsiphonage or backpressure.

Reduced Pressure Principle Assembly (RP)

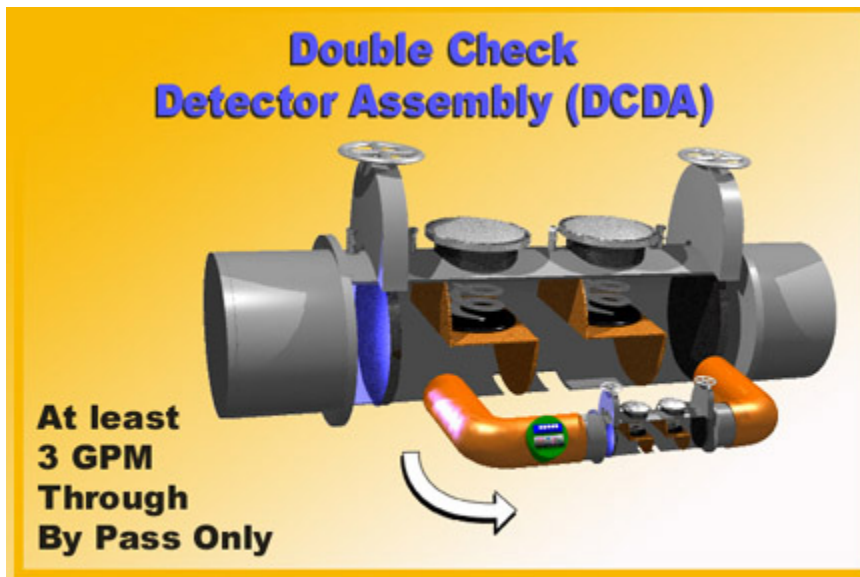


Normal Flow

This assembly consists of two internally loaded independently operating check valves and a mechanically independent, hydraulically dependent relief valve located between the check valves. This relief valve is designed to maintain a zone of reduced pressure between the two check valves at all times. The RP also contains tightly closing, resilient seated shut-off valves upstream and downstream of the check valves along with resilient seated testcocks. This assembly is used for the protection of the potable water supply from either pollutants or contaminants and may be used to protect against either backsiphonage or backpressure.

Reduced Pressure Principle Detector Assembly {RPDA}

The **RPDA** is very similar to the double check detector assembly except that the RPDA is designed for situations requiring the protection of a reduced pressure principle assembly and detection of unauthorized use of water or leaks. As with the DCDA, the bypass meter must register accurately at low flows. This assembly is normally used on fire lines which may contain contaminants, such as anti-freeze additives or foamite.



The DCDA is composed of a line-sized double check valve assembly with a specific bypass meter and meter-sized double check valve assembly. The meter registers accurately for very low flow rates to detect any unauthorized use of water. This assembly is used when the protection of a double check valve assembly is required, yet where the added requirement of detecting any leakage or unauthorized use of water exists. Normally these assemblies are reserved for use on fire sprinkler lines.