

Backflow and Cross Connection Control



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What is Cross-Connection

- Any plumbing connection between the city's water lines and a private water system.
- These include sprinkler systems, fire systems and domestic water connections.



Containment or Isolation?

- A backflow device on the incoming line or service is *containment*.
- The device is after the water meter, but before any branches or connections to the service line.



Containment or Isolation?

- A backflow device installed on a residential lawn sprinkler system is an example of an *isolation device*.
- This device prevents lawn sprinkler water from getting back into the home.



Backflow

- **Backsiphonage**
 - A negative pressure that can be caused by water main breaks, fire hydrant flushing or fire fighting.
 - Backsiphonage can draw all the water from a private water system.
- **Backpressure.**
 - When pressure in the private water system exceeds the city's water system
 - Can be caused by a pump used to increase pressure for a single irrigation system.
 - This causes water to be forced back into the city's system.




5 Types of Backflow Devices

1. Air Gap
2. Atmospheric Vacuum Breaker
3. Pressure Vacuum Breaker
4. Double Check Assembly
5. Reduced Pressure Principle Assembly


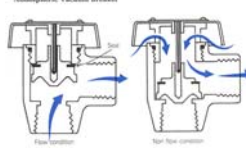


1. Air Gap




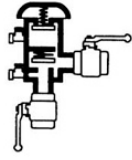
- Used mainly on tanks and faucets, it is a gap between the pipe and the container.
- Requirements:
 - 2 times the supply pipe diameter.

2. Atmospheric Vacuum Breaker (AVB)



- Used mainly on lawn irrigation systems. It has an air inlet valve that will drop to draw in air thus preventing sprinkler system water from entering the City's water mains.
- Requirements:
 - Not under continuous pressure for more than 12 hours
 - No downstream valves
 - No backpressure
 - 6" above high point of use

3. Pressure Vacuum Breaker (PVB)


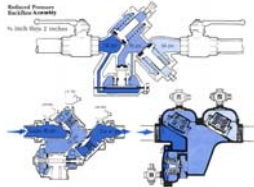
- Used mainly on lawn irrigation systems.
- It has a one way check and a spring loaded air inlet valve that closes when City water main pressure drops.
- Requirements:
 - No backpressure
 - 2" above high point of use
 - Protect from freezing

4. Double Check Assemble (DCA)

- Operates similar to a Pressure Vacuum Breaker.
- Used on low hazard buildings and on fire lines.

5. Reduced Pressure Principle Assembly (RPPA)

- Used on high hazard buildings and is a combination of check valves and an air inlet allowing water from the private system to vent when City pressure drops.

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