Backflow Prevention Devices: What They Are and How They Work

What Is Backflow?

Before we get into the devices themselves, we have to understand backflow. When we think about water flow, whether it's in the home, in a sprinkler system, in an irrigation system, or in plumbing, we should know that liquid from the water main should only flow *to the property*.

But when sprinklers go off or when a fire hydrant gets released, the system loses pressure, and water that was pushed onto the property may flow backward—that's where backflow comes from. Backflow is dangerous because it can become a pollutant. Contaminants like pesticides, human waste, chemicals, fertilizers, and even stagnant, bacteria-ridden water can get into the clean water supply and make for a massive hassle.

What's a Backflow Prevention Device?

To save us from this hassle, people invented the backflow prevention device. Simply put, it prevents backflow from happening.

It's designed to keep water inside the systems, flowing in one direction—from the water main *into* the pipes. This will keep pipe water from flowing *into* the water main.

How Do They Work?

But how exactly does this happen? These devices rely on specific valves: check valves or two one-way valves. These valves get lined up in a series to prevent backflow from occurring. Think of it as a one-way door—once it's gone out, there's no other way for it to come back in.

If any pressure coming back to the water main exceeds that of the route of flow, then the valves close, preventing backflow. So, when the sprinklers go off, the pressure releases upstream, therefore increasing the downstream (toward the water main) pressure. Valves shut, eliminating the possibility of backflow.

Backflow Direct Devices