



HOW VALVE INSERTION CAN UNDERPIN SUSTAINABILITY

A White Paper by Hydra-Stop

To save money and protect the environment, municipal water systems are increasingly under pressure to adopt sustainable practices. However, progress in this area is often hampered by a wide array of issues — including the loss of treated water, maintaining fire protection, de-chlorination, line flushing, and backflow/cross-connections — that can occur during pipeline repairs and modifications.

WATER LOSS = ENVIRONMENTAL IMPACT

A common misconception is that water loss during this pipeline work doesn't equate to throwing money out the window and that the resulting shutdowns don't impact the environment. The reality is that both repairs and modifications that rely on traditional valves can generate a significant loss of treated water and have an extensive

environmental impact.

As an alternative, the use of valve insertions has emerged as a sustainable maintenance solution. Insertion valves maintain the integrity of the water service, which means no flushing is needed and there is little to no water loss, while treated water is prevented from being released into the environment. There are also a variety of other ways that insertion valves contribute to lower costs and improved sustainability.

MINIMAL EXCAVATION/REDUCED PIPELINE IMPACT

Here's how insertion valves work: Installation is accomplished through a single line tap made under full line pressure into the pipe. After installation, the insertion valve remains a permanent asset and can be operated,

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when needed, allowing for system control, repair, and maintenance in the same manner as a traditional gate valve.

The process requires minimal excavation at the site, so it creates much less of an environmental disturbance than installing traditional valves. This is important because in some conditions, utilities may be required to send the removed soil elsewhere for treatment and transport other material to the site to fill the hole.

Another often overlooked factor is that in older water systems — in some cases a century old or older — the pipes have likely been supported by the dirt surrounding it. Traditional valves force maintenance workers to depressurize the system. When pressure is reintroduced, weak spots are suddenly exposed. Additionally, when you reintroduce pressure into a water system that's been drained, all the corrosion that has built up gets swept through the line. Not only does it come out as rusty water, but it also fills the water heaters, strainers, meters, and

backflow preventers of customers.

With insertion valves, there is no depressurization, so all those problems can be avoided. The leak was significant enough to forego utilizing a repair band because a more permanent fix is required, which means a comprehensive maintenance plan must be devised to replace the leaking pipe while maintaining service to the hospital.

WE DON'T KNOW WHAT WE DON'T KNOW

Pipeline repairs can be a guessing game, especially with smaller municipal water utilities that don't have detailed mapping of their assets. In other words, they don't know where all the lines are, where connections are made, or the age of pipes and valves. With so many unknowns, maintenance personnel can't always get a grasp on the situation until they arrive at a scene. And even then, things may not be clear.

Insertion valves offer the versatility to handle

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any problem pipeline repair situation, as they can be installed before, during, or after an incident and as close together as necessary. The most innovative products can be installed inline and operated during a 100 percent full-flow event where a line is sheared or a section is blown out. Once inserted, the valve can simply be closed to isolate the point of repair.

Once you've determined that insertion valves can significantly enhance your sustainability strategy, there are several things to consider when selecting a vendor:

- Do their products meet or exceed industry design standards, and have they been tested to the four major tests that a traditional valve would be subject to?
- Do they offer training and technical support?
- Is the installation process simple?
- How versatile is the solution? Can it be installed at any increment of 360 degrees around a pipe, even upside down if necessary? Does it have a low profile to be able to work in a shallow burial?
- What is the longevity of the product? Is it built to be a permanent asset for your infrastructure?

The use of insertion valves as a maintenance strategy can go a long way toward supporting a utility's sustainability goals. At the same time, it is a great way to prove to customers that the utility is making smart investments that save money and promote better environmental stewardship.





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