

## Singer Diaphragm Valves Ensure Township Successful Upgrade



**Two 10" and two 8" Singer Pressure Reducing Valves installed in Bloomfield Township's Inkster Vault**

Bloomfield Township's drinking water supply is purchased from Detroit Water and Sewerage Department (DWSD) through Southeastern Oakland Water Authority (SOCWA). Typically, DWSD water pressure is high when it enters the Township, around 100psi. As such, Pressure Reducing Valves (PRVs) are used to reduce the DWSD pressure down to more manageable pressures for the Township's 41,000 residents and numerous businesses. Over the years, PRV vaults have been constructed at each connection to DWSD and to other areas in the Township that have steep elevation changes.

**Problem:** The original control valves were piston-style used for pressure reduction in these vaults. These piston-style valves were difficult to work on, expensive to rebuild, and preformed erratically as they aged. With many of the valves installed in the 1960's and 1970's, the repairs were becoming more frequent leading the Township to evaluate diaphragm style control valves as a replacement option. Kennedy Industries presented to their group on the advantages of Singer Valve, highlighting key standard features like fusion bond epoxy coating, stainless steel trim and seats, self-flushing pilot components, the single rolling diaphragm technology for low flow stability.

After the evaluation, the Township selected two (2) Singer Valves in their system; including one 12" Singer Valve Model 106-PR PRV at their Bingham Rd vault. The original vault included one 12" and one 4" Piston-style PRV due to the fact that one single piston-style PRV could not handle the full range of flows effectively. This arrangement is commonly referred to as a "low flow bypass" and is not necessary with Singer Valves equipped with the single rolling diaphragm. The 12" Singer PRV that the Township selected is equipped with a Single Rolling Diaphragm can easily control down to 5GPM without hunting, chattering, and without the need for a low flow bypass. The 4" valve could be eliminated or used strictly as a maintenance bypass.



**Township Engineer, Olivia Olsztyn-Budry and Water & Sewer Foreman, Ken Brown, with one of the new PRVs**

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**Solution:** The 12" Singer PRV installed at Bingham Rd truly displayed precise control across all flows, as witnessed by the Township's maintenance foreman, Ken Brown. The ability to smoothly operate at low flows is due to the Singer Valve's single rolling diaphragm technology. The rolling diaphragm keeps the same surface area throughout the entire stroke of the valve, allowing for precise control. At the Bingham site, the Singer Valve diaphragm moved off the seat only marginally to precisely maintain and reduce the pressure on the downstream side. Even at extremely low flows, the 12" Singer PRV, handled flow smoothly and only modulated enough to maintain their desired downstream pressure whereas previous piston-style valves had "popped" open to quickly often causing water hammer and system transients which is a concern for the Township.

After the initial Singer Valves were installed, Bloomfield Township specified Singer Valve as the PRVs of choice in the upgrade of three (3) key PRV vaults; Square Lake & Telegraph, Square Lake & Adams and Inksster. The Township worked closely with Kennedy Industries and Singer Valve to custom engineer valves with all of the features and functions they feel are critical for their specific application. Some of these custom options include: all stainless steel pilot valves and components, manual blow down on the pilot strainer, dry visual position indicator, model 26 flow stabilizer/opening speed controls and 4-20ma motorized pressure reducing pilot. Each valve, regardless of size, are piloted identically and allow for the remote adjustment of the pressure settings of each valve via 4-20mA signal from their SCADA.

The new Singer Valves installed at each vault have been working consistently and offer the maintenance friendly, reliable, smooth performance that the Township desired. Bloomfield Township will continue to replace their existing piston-style valves with the current Singer Valve technology. Eventually, these PRVs will also be controlled via the 4-20mA signal from their SCADA system offering precision control remotely.

## Product Features:

- Single Rolling Diaphragm for Low Flow Stability
- Self-Flushing Pilot Components
- Stainless Steel Trim & Seat
- Fusion Bond Epoxy
- Multiple Options & Functions Available
- System Audits for Custom Solutions and Applications



Existing PRVs performed inconsistently and were difficult and expensive to repair



The replacement Singer Valves are a low maintenance option that offer precise control