Singer's Specialty PRV Regulates Bangkok Pressure

The Client
Metropolitan Water Authority, Bangkok, Thailand

The Challenge
- Low daytime pressure caused PRV to fully close, cutting off water supply
- Reducing nighttime pressure without risking daytime supply

The Solution
Singer's Pressure Reducing Valve with ability to fully open at low pressure

The Result
A PR valve that opens fully at extremely low pressures and high flow periods. While reducing pressure during low flow and high pressures (night time).

Singer Valve likes solving unique water problems. In fact, the North American company specializes in providing custom, one-of-a-kind solutions to some of the most challenging water-related problems in the world.

Take Bangkok's Metropolitan Water Authority (MWA), for example. The water authority, which services 8 million people, is focusing on improving pressure management in an effort to reduce serious water losses. With water loss up to 30 per cent, the water authority installed pressure reducing valves throughout Bangkok and its suburbs. The valves controlled nighttime pressures accurately, preventing leaks and breaks. However, in some areas, high demand during the day caused the pressure to drop to 10 psi (0.68 bar) or less. Without sufficient pressure differential, regular pressure reducing valves would close, cutting off supply to consumers.

"Because of the large diaphragm and sensing area of the three-way pilot," says Bahia, "the valve required only seconds to open. And it remained open during the day's high flow demands even with pressure as low as 2 psi (0.14 bar)."

Through Win Wannapanit of Smith Tech Co., Singer Valve's representative in Bangkok, Singer Valve learned of the challenge.

"Typical PRVs cannot open when the pressure drops below 10 psi (0.68 bar)," says Eugene Bahia, Singer Valve's instrumentation specialist. "We were determined to find a solution for Bangkok."

Bahia experimented with different pilots. One field test, which employed a third-party pilot, was unsuccessful because the valve was too sluggish, requiring several minutes to open. And its performance when pressure rose above 10 psi (0.68 bar) was not reliable.

In Singer Valve's flow lab in Vancouver, British Columbia, Canada, Bahia tried again. He fitted a 12" (300mm) valve with a standard Singer PR pilot and a Singer high-accuracy three-way pilot. By installing the custom combo into the flow lab, Bahia simulated various pressure and flow conditions. The results were rewarding.

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When the custom unit was installed and tested in Bangkok, the results remained consistent. Pressure was reduced during high pressure periods at night. During low pressure / high flow periods in the day, the valve opened fully ensuring a constant water supply to consumers.

"The valve can open at really low pressures," says Win Wannapanit, who trained Bangkok's water operators how to use the valve. "MWA installed numerous 12" (300mm) valves and is very happy with them."

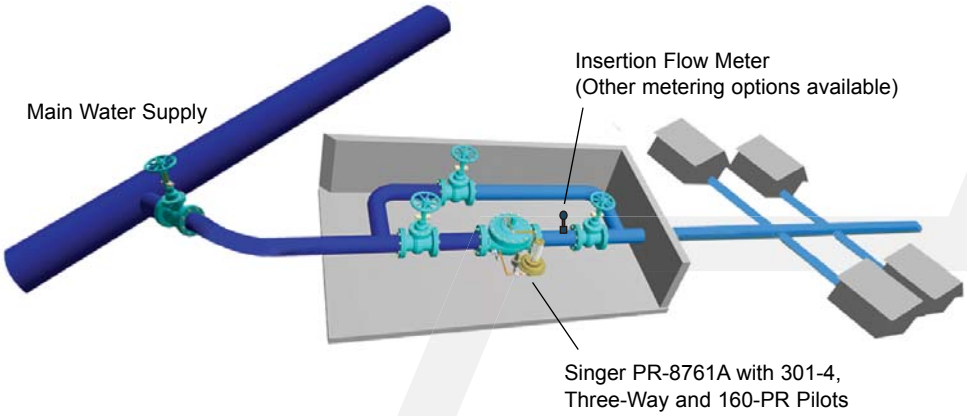
"Our water loss was about 30 per cent," says Mr. Ulit, MWA's director of water loss management. "With Singer Valve, it's now below 30 per cent."

Benefits of Singer's PR-8761A

- Main valve fully opens at low pressure settings (day time)
- Reduces pressures during high pressure periods
- Repeatable and precise
- Long-lasting and self-cleaning pilots

How It Works

A 12" (300mm) valve is fitted with a standard Singer PR pilot—for normal pressure reducing applications when there is adequate supply pressure—and a Singer high-accuracy three-way pilot. The high-accuracy, modified, three-way pilot automatically overrides over the PR pilot when it senses low supply pressure/high demand because it has a large diaphragm sensing area, making it highly sensitive. When the supply pressure drops to a pre-determined level, the high-accuracy, three-way pilot dumps the water off the main diaphragm allowing the main valve to fully open even at low pressure.



Did You Know…

Singer Valve offers a valve that can open fully at very low pressures, as low as 2 psi (0.14 bar). Standard pressure reducing valves usually fail closed when inlet pressures drop to 10 psi (0.7 bar) or less.

Singer Client Who Uses This Newly Introduced Product

- Jakarta, Indonesia

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