



Advanced Differential Pressure Flowmeter Technology



Application Note – HVAC/Institutional Facility

Measurement of Chilled Water & Steam

In most instances the use of V-Cones associated with chillers for chilled water in large institutional users is a matter of space, accuracy, and turndown. The V-Cone needs very little upstream and downstream piping requirements, allowing it to be used in spaces where other meters cannot be used, or to replace existing flowmeters that never proved accurate because of space limitations. In many large universities and other facilities, such as hospitals and airports, across the U.S., the reason for initial interest and subsequent purchases of V-Cones to measure Chilled Water was to fit within the confines of the existing and new buildings that were being used to house the chillers. Additionally, the second most important reason was the delivered accuracy. In the past, most usage had been ignored, but with the rising costs associated with cooling, each individual building must be accountable for individual use. This is just good fiscal responsibility and management from an energy balance standpoint. Turndown was an issue because of seasonal swings in usage based on climate and population in the buildings at any particular time. Therefore, the meters needed to be able to have a large flow span (turndown), which remained accurate during continuous use.

V-Cones have recently been selected for Steam service for mostly the same reasons as they are selected for Chilled Water. Space limitations in new and/or older buildings are a serious concern. V-Cones have the smallest piping requirements of practically any flowmeter and continue to deliver accurate measurement, so they are fiscally responsible and cost effective. Additionally, in steam, they allow condensate and/or other small particulate matter to pass without affecting the measurement, thus giving much better accuracy instantaneously and over time. They are very rugged flowmeters which require little or no maintenance, and have a very long expected life even in “tough” service like steam. They can be designed with great turndown (span) and therefore can accommodate changes in flowrates based on demand, seasonal or from other factors.

