V-Cone Application Guide

Industry: ..... ***Food & Beverage Production***
Application: ..... ***Steam & Speciality Gases Measurement in breweries***

Measurement Challenge/Difficulty:

Steam being used in breweries had always been overlooked as a source of "reusable" or "capturable" energy. Typically used for steam flow measurement (usage), orifice plates and averaging Pitot tubes proved to be inaccurate, required costly, extended pipe runs and regular maintenance and replacement. In generating steam, thermal mass meters had been used but presented some of the same problems. Brewers looking to improve their efficiency needed a new method to obtain and measure a thermal mass balance around the plant for steam generation and usage. Specialty gases such as Carbon Dioxide, Nitrogen, and Chlorine were being used in the utilities and process areas of the brewery. All of these were measured with previously mentioned flowmeter technologies, usually inadequately. The brewers needed a better flowmeter that would reduce the use of expensive purchased gases and to be able to more accurately monitor use of generated steam and energy demands.

Previous Method:

Steam measurement was made with orifice plates, then averaging pitot tubes. Specialty gases were measured with thermal mass dispersion meters. All technologies referenced had similar problems with pipe diameter restriction, maintenance/replacement frequency and poor accuracy.

Solution:

V-Cone flowmeters were installed, reducing operating costs and virtually eliminating replacement expenses. The accuracy of the flowmeters helped the brewery to better calculate their steam/heat balance. V-Cones on specialty gas lines helped reduce usage and more accurately measure evolved Carbon Dioxide, resulting in more economical production.

V-Cones measuring Chlorine gas optimised the cleansing cycles thereby reducing gas purchases. V-Cones used in Nitrogen applications measured the gas more accurately, reducing the overall consumption.

Date Installed:

1997 and Ongoing

Industry:
Food & Beverage Production

Niche Market:
Breweries

Process:
Specialty Gas & Steam Measurement

Product:
Beer

Fluid(s):
Steam, Carbon Dioxide, Nitrogen, and Chlorine Gases

Viscosity:
Varies per Fluid

Flow Rate:
Varies per Fluid

Pressure:
Varies per Fluid

Temperature:
Varies with Fluid

Size:
Varies per Fluid

Date:
March 31, 1992

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measureable
Solutions. Support. Success. A news article from ABLE Instruments

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