

MEMO

From: F. Baneyx
To: Team B
Subject: Orifice Characterization

Orifice meters are commonly used to measure flow rates. We would like to establish the accuracy of such measurements for a variety of orifices, which include circular and rectangular shapes. We have a water flow test facility to measure flow rates and pressure drops.

Your first objective is to see whether or not our facility can yield results for circular orifices similar to those found in the literature. Compare your results with those in those obtained in the literature (Perry's Handbook). Use downstream pipe tap locations approximately 0.5, 1, and 2 pipe diameters downstream and an upstream tap approximately 1 pipe diameter upstream. Note that our orifices are sharp-edged. Avoid using any taps that appear damaged.

For the rectangular orifices, measure the orifice coefficient as a function of flow rate and determine if the orifice coefficient depends on the orientation of the rectangular slit. You select the flow rate range to be explored.