

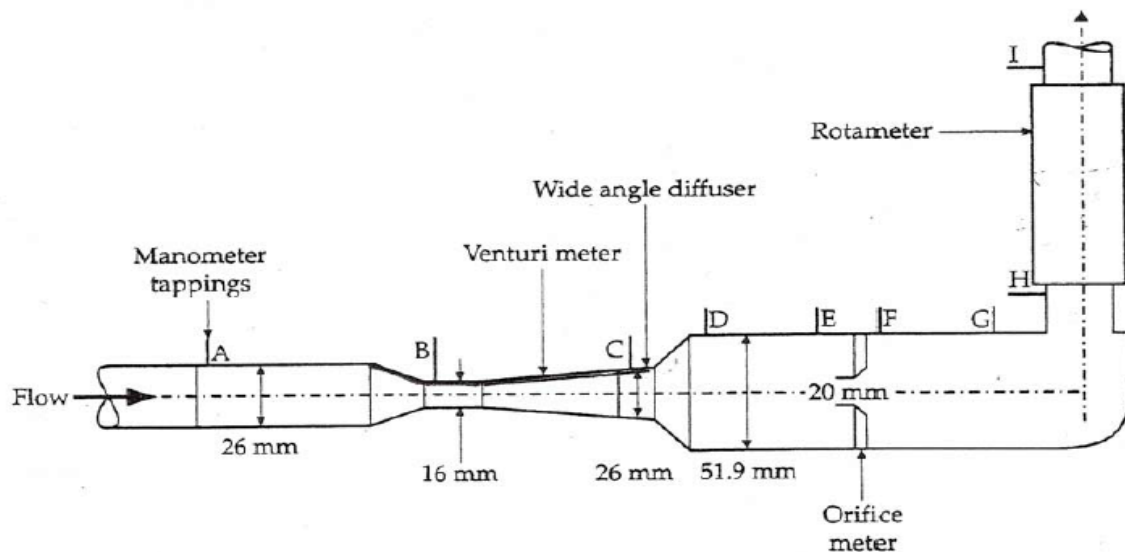
# THERMOMECHANICAL MEASUREMENTS FOR ENERGY SYSTEMS

MENR (A.A. 2017-2018)

## Laboratory n. 5

A water workbench is equipped with an hydraulic circuit, with three flowmeters assembled in series: a venturi tube, an orifice meter and a rotameter.

The sizes of the inner flow sections are shown in the figure:



The pressures (hydraulic loads) are measured with hydraulic manometers in the points A, B, C, D, E, F, G, H, I.

- Compare the reference values of the volume flow rate with the values measured by each flowmeter, using different average flow rates (measured with the spillway). The calibration curve of the rotameter for water is shown below.
- Compare the experimental data of the  $\Delta p$  with those of the theoretical graduation curve.
- Compare the load losses of the three flowmeters and evaluate the *discharge coefficient* ( $C$ ) of all three flowmeters.

