

PRINCIPLE OF U-TUBE MANOMETERS

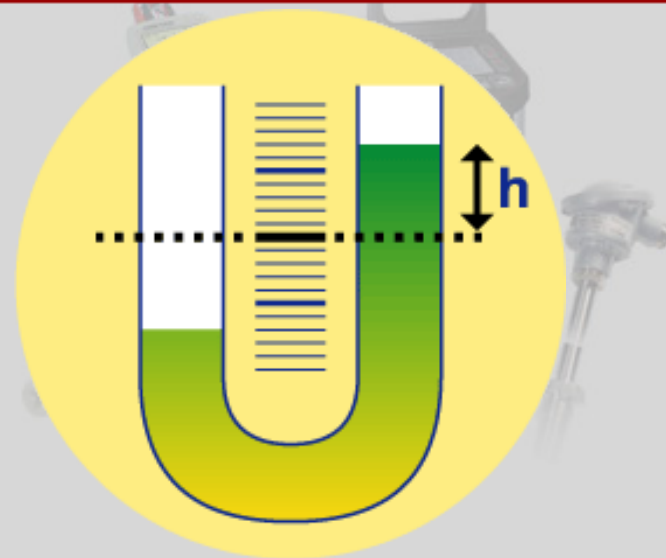
Basic knowledge

U-tube manometers of this type are primary standards.

The measuring principle of these liquid manometers is based on the following relationship:

$$dp = dh \times \rho_m \times g$$

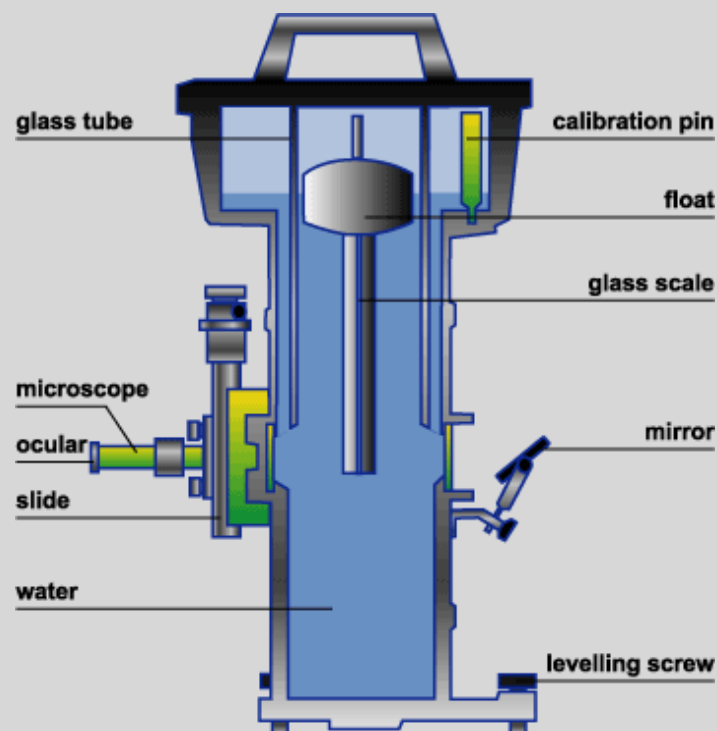
The pressure (p) to be measured is to be compared with the height (h) of a liquid column. If the pressure exerted on the two surfaces of the so-called confined liquid is not the same, there is a deflection and consequently a difference in height. The confined liquid continues to rise until the effect of the force of the pressure differentials and the weight of the liquid columns are identical. In accordance with the laws of physics, the effect of the liquid column on the pressure in the liquid is, in essence, only dependent on height (h) of the liquid column and on density (ρ_m) of the liquid. Further influences are relatively low and known. For highly precise measurements, correction calculations can be made. Recalibration is not necessary.




Principle of MINISCOPE

MINISCOPE testers are U-tube manometers of a special design.

In these devices both legs are "inserted in each other". The filling medium is normal tap water. A hollow body of special steel floats on the surface of the water in the inner leg. The glass scale is attached to the latter, which is read via an eyepiece on the integrated optic system. Pressure changes of as little as 1/1000 mbar (0.000014 psi) can be read by means of a reticule and a micrometer drum, which can be precisely adjusted. In addition, a projection device featuring a ground-glass disc instead of the eyepiece is offered as an optional extra.



 **Ross Brown Sales Pty Ltd**

ABN 28 000 690 362

Phone: 612 9899 2744 Fax: 612 9899 4233

Email: sales@rossbrownsales.com.au

Web: www.rossbrownsales.com.au