



This equipment consists of 3 units arranged to study different types of manometers.

It includes:

- Static fluid panel and manometry.

It consists of different types of piezometric tubes and level measuring elements such as graduated scales and limnimeter. Transparent tank where we will pour water, and through the different valves and pipes, the water is brought to the different columns.

One of the water columns has a system to tilt it, so that the effect of the different possible inclinations can be clearly visualized. Both in the different columns and in the tank, it exists a graduated scale to visualize directly the height of the water.

It also includes a limnimeter for accurate water measurement.

- Calibrator of dead-weight manometer.

The objective to be achieved with this equipment is to determine the reading error of a Bourdon manometer since, to guarantee the accuracy and precision of these manometers, it is necessary to perform calibration processes and continuous evaluation of the instrument.

For this purpose, procedures will be carried out to verify accuracy and precision using a deadweight calibrator.

- Bourdon manometer panel (manometer and vacuumeter)

**LEARNING OBJECTIVES**

A wide range of experiments and experiences can be performed, some of which are listed below:

- Study and testing the hydrostatic paradox.
- Comparison between absolute and relative pressure.
- Use of the piezometric tube.
- Pressure measurement with the following types of manometers:
  - in "U"
  - inverted "U"
  - Titled
  - Differentials
  - Bourdon
  - Bourdon vacuumeter
- Use of limnimeter to measure the water level.
- Use of graduated scales to determinate the water level.
- Study of the air influence inside the manometers.
- Study of load loss.
- Functioning manometer explanation.
- Manometer calibration.

**TECHNICAL DATA****Tank:**

- Storage capacity 4 liters.
- Maximum height 560mm.
- Internal diameter of the tank 94mm.

**Manometer panel:**

- U manometer. Scale 460mm.
- Piezometric tubes. Scale 460mm.
  - 2 paralels
  - Variable section.
- Tilted manometer, scale 460mm, 4 positions:
  - 5°.
  - 30°.
  - 60°.
  - 90°.

**Other elements:**

- Lumnimeter: maximum reading capacity 150mm.
- Backflow valve

**Range of Bourdon manometer measures for calibration:**

- Bourdon manometer 0 - 250 kPa.

**Cylinder weights:**

- 1x 2500 gr
- 1x 1000 gr
- 1x 500 gr

**Stainless steel piston:**

- Piston area:300mm<sup>2</sup>
- Total weight: 500gr