Description

Calibration of A Bourdon Pressure Gauge

Description:-

A Borden pressure gauge with visible working mechanism to demonstrate how this type of pressure gauge works and how to calibrate it. The apparatus is a Bourdon gauge connected to a dead weight tester. This end admits pressure. The other end of the tube, connected to a dial and pointer mechanism, is free to move. The Bourdon gauge has a transparent dial that allows students to see the working mechanism. The mechanism is a thin walled tube with an oval cross-section, bent into an arc. One end of the tube is held rigidly. When the pressure in the tube increases, it tries to straighten and so moves the pointer by an amount proportional to the pressure increase. To calibrate the gauge, students add weights to a platform on a dead weight tester. The weights put a known force on to a piston. Students add the weights in increments, recording pressure readings from the gauge at each increment. They then remove the weights and record gauge readings. The piston has a known area, so students can calculate the pressure. A flexible tube containing water transfers the pressure on the piston to the Bourdon tube.

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