

PRE-EXPERIMENT DEVICE SET-UP

1. Level experimental device.
2. Place weight hanger on rod.
3. Tare device with water in counter-hopper.

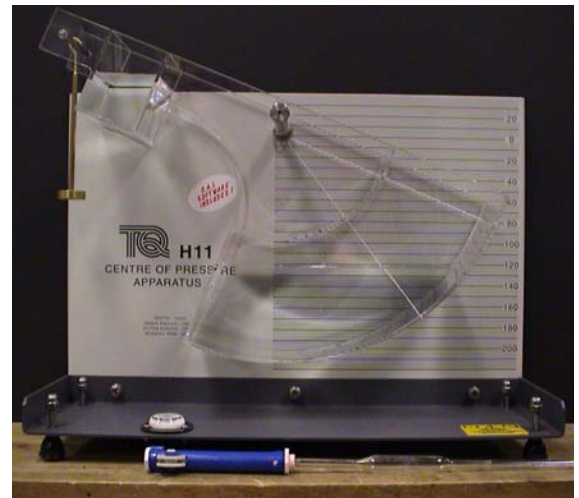


EXPERIMENT 1: PARTIALLY FILLED HOPPER

1. Fill hopper with known volume of water such that water level does not contact upper arch of hopper when in equilibrium position (not shown).
2. Experimentally determine counterweight required to balance device.
3. Compare experimentally and analytically determined counterweights.

EXPERIMENT 2: MORE COMPLETELY FILLED HOPPER

1. Fill hopper with known volume of water such that water level contacts upper arch of hopper when in equilibrium position.
2. Manually tilt device to eliminate air bubble at arch-wall interface.
3. Experimentally determine counterweight required to balance device.
4. Compare experimentally and analytically determined counterweights.



REPORT

Prepare a brief report including an introduction to the experiments, what was measured and for what reason; the methods used to conduct the experiment and supporting analysis; the results of the experiments; and a discussion including a comparison between experimental results and analytical predictions and sources of error between these values.