

PARTS LIST:

1. One base and stand
2. Four vessels of different shapes
3. Instructions

OTHER ITEMS REQUIRED:

1. Water
2. Weight Set



INTRODUCTION:

This apparatus demonstrates that pressure depends on depth only and not on the shape of the vessel. The pan on the right is used to place the weight for the same level of fluid in each "vase".

EXPERIMENT:

The different glass vessels are successively inserted in the base part and filled with water. The hydrostatic pressure at the bottom of each vessel is measured by placing weights in pan. There is also a rod to hold the position of the level of fluid so that the level will always remain the same, no matter the pressure.

When we place weights to the pan it will work as external mechanism which provides the upward force to keep the vase leak free.

Fix the pointer at a height and fill the water in vessel by replacing the vessels and fill with same height of the water upto the fixed pointer, you will see that the same weight used in pan is able to stop the leakage, i.e. fluid exert the same pressure in all vases at same height.

CONCLUSION:

The actual pressure at the bottom of the vase can be measured with the apparatus. These are unequal-arm balances, in which the downward force on one side given by the product of the pressure at the bottom of the vessel of water and the cross-section of the vessel at this point. The force is actually exerted on a circular metal disk which presses against the bottom of the vessel. A group of weights is hung from the other hand side of the balance; they are initially large enough to keep the disk in place. Weights are then slowly removed until the system becomes unbalanced and water runs out of the bottom of the vessel. Proving the truth of the paradox requires the use of vessels of several shapes, but always with the same bottom cross-section area and filled to the same depth. All of them will start to leak at the same value of the balancing weight.