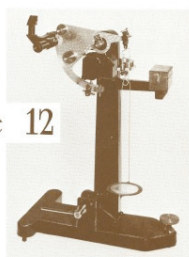


Precision Balance 12

HANS JENEMANN



This is a laboratory balance with oil damping, made by Starke & Kammerer in Vienna, c.1925. It has facilities for weighing from 0.01 to 120 grams, and uses an unequal-arm beam with only two knives. It works according to the substitution principle (see Page 873) in combination with a large inclination range.

The balance has only one pan, which is however, a double pan. The upper one is for the weights which range from 10 to 110 grams, and the lower pan is for the load. The weights, subdivided into 10, 10, 20, 20, and 50 grams, are kept in a little wooden box on a bracket near the upper pan.

The beam of this balance is in the form of a quadrant with the distance from the main knife to the pan knife being 60mm (2.3"). The radius of the quadrant is 105mm (4.1"). On the left of the beam, on the arc, are two disc-shaped counterpoises, and at the bottom of the arc there are screws for adjusting the zero position and the sensitivity of the balance.

Below the main knife there is a small oil-filled box. A little rod with a rectangular plate at the end projects down from the beam and is immersed in the oil. This plate damps the swinging of the beam and acts even more quickly than the air damping of the analytical balance.

The inclination range of the beam is divided from 0 to 10 grams, each half gram being marked with numbers 0, 0.5, 1.0, 1.5 and so on. Between these marks all the 1/100th gram divisions are shown as little lines, those at the fifth and tenth positions being longer. These graduations are observed through a microscope which is attached by a hooked holder in the same manner as the weight box. (The microscope is at the top left of the picture). As it is possible to estimate the half position between the little lines, the reading sensitivity is 0.005 grams.

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Abstract

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