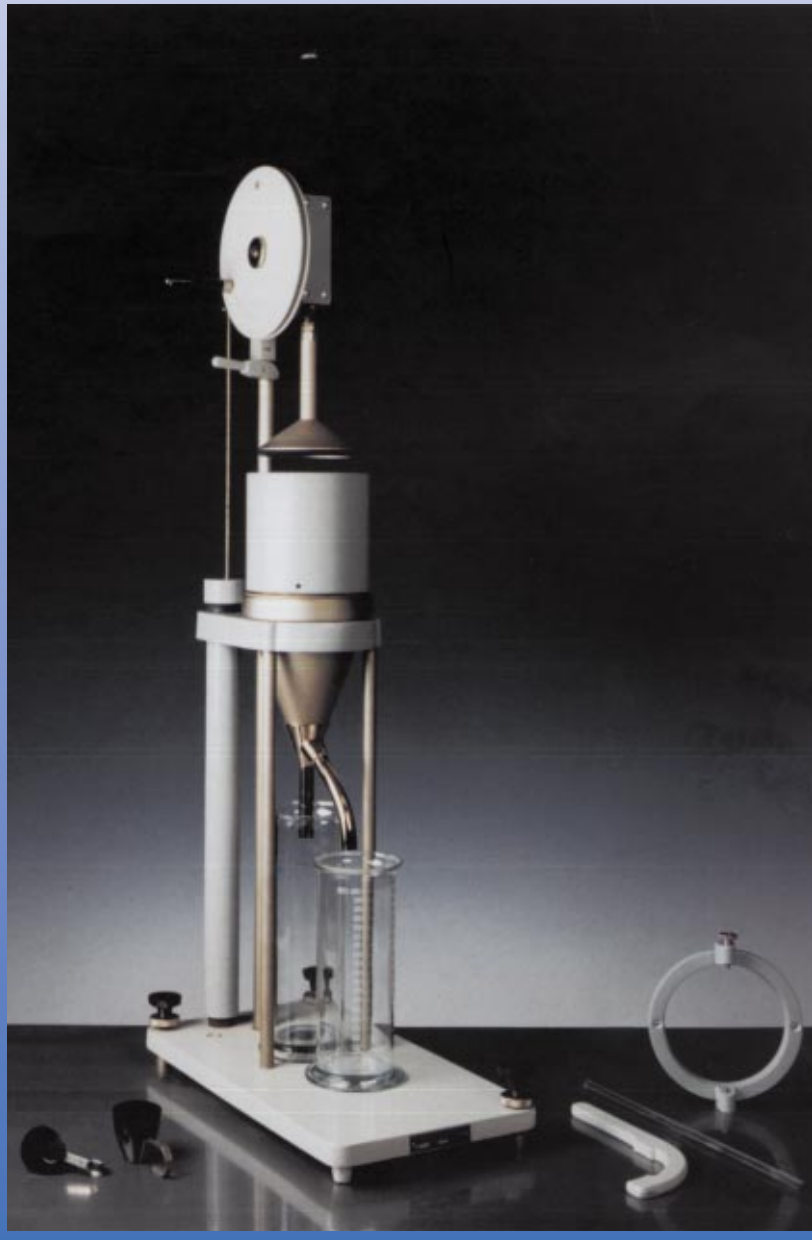
Freeness Tester

SR 1



Mechanische Werkstätten Stendal

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Application

This device permits both a reliable determination of the drainage rate of paper pulp on a screen as well as a safe evaluation of the pulps fineness, since the drainage rate and the size reduction of the fibrous material are closely related. It provides parameters for the conditions of fast draining, and wet, which are otherwise of a relative nature and depend strongly on a subjective evaluation by the observer. These values can be determined so speedily that the effect of the Hollander beater or other size reduction devices on the fibrous material may be monitored continuously. Thus, the beating process may be terminated once the optimum freeness for papermaking, based on previous experience, has been reached. The determination of the fibrous condition is important not only for the mixed pulp used for the manufacture of handmade paper but also for the individual unprocessed types of fibre, such as cellulose and pulp wood, since the testing results provide valuable hints as to the best subsequent use and processing of these materials.

Due to its fast operation, the device keeps absolutely abreast with the beating process and thus enables a scheduled control of the beating process. The testing method consists in an emulsion volume equivalent to 2 g of dry materials being finely distributed in 1000 cm^3 of water and drained through a screen. The screen forms the bottom of a chamber placed on a funnel with two discharge openings at different levels. When the material drains quickly (fast-draining), a large part of the water is discharged through the upper opening, whereas for wet pulp, this is only a smaller part.

The amount of water collected in the vessel below the lateral discharge opening constitutes a measure for the drainage rate or the freeness of the pulp. The measuring vessel features a scale for the value to be read directly.

Design

A conical separating chamber with two discharge openings is set on a stand. A filling chamber provided with a screen of defined mesh size and area is positioned on the separating chamber. To seal off the filling chamber against the separating chamber, a sealing cone has been fitted into the filling chamber for the pulp-water mix to be filled in before the start of the test. The sealing cone is lifted from the filling chamber by means of a falling weight. It is for this purpose that the cone has a gear rack interlocking with a gear wheel. The gear wheel in turn is connected with a roll fitted with a cord featuring a weight at the free end. Upon releasing the locking mechanism, the cone is lifted at an even speed.

Technical data

Dimensions:
(length x width x height) 450 x 250 x 1000 mm

Weight:
net 34 kg, gross 86 kg

Set-up:
The device is set up on a table and aligned with the help of the existing adjusting screws.

We reserve the right to alterations of the design and technical data.

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