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Use, Calibration and Maintenance of the Manually Operated Paper Micrometers

Scope

This Technical Information Paper outlines the differences between the different types of calipers. It covers the procedures used to calibrate and clean the anvils. It also provides a list of things to avoid when maintaining the manually operated micrometer. This TIP does not discuss repair procedures for the manually operated micrometers, calibration procedures for motorized instruments, or calibration procedures for instruments with electronic digital indicators.

The manually operated micrometer is commonly used when performing caliper (thickness) measurement tests on paper, paperboard, linerboard, corrugated board, and solid fiberboard.

Caliper of corrugated board and its components is critical in assuring board quality and physical properties. Caliper is important to paper mills because it is used to control the process related to sheet density and other quality attributes. In corrugated plants, the caliper is used to control quality of board through the combining and converting processes. The caliper test is relatively simple to perform but is susceptible to serious errors if the instrument is not properly maintained.

Safely precautions

There are no safety precautions.

Components of the manually operated micrometer

The manually operated micrometer consists of the following:

1. A mechanical dial indicator.
2. A vertically movable foot with an attached circular plate that serves as the upper anvil.
3. A rigid base with an opposing circular.
- 4a. A spring-loaded actuator lever that raises and lowers the upper anvil to allow the paper sample to be measured.
- 4b. Dead weight calipers have a gravity operated anvil. The upper anvil is spring-loaded coupled to metal slug which applies a fixed preset pressure of 50 kPa (7 psi) to the test specimen during measurement.
5. A dial zero adjustment set screw located directly in the micrometer frame