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QUALITY ENGINEERING
LABORATORY BÖBLINGEN

Title: AIR RESISTANCE

1.0 INTRODUCTION1.1 SCOPE

- 1.1.1 This document establishes the method for determining air resistance of paper or card stock.
- 1.1.2 Air resistance is defined as the relative ability of paper to resist the passage of air. The average number of seconds required for the displacement of 100 ml of air through an area of one square inch of paper is known as "Porosity" or "Air Resistance".

1.2 REFERENCES1.2.1 Standards

TAPPI T402 - Conditioning Paper and Paperboard for Testing
TAPPI T460 - Air Resistance of Paper

1.3 AUTHORIZATION

- 1.3.1 This document is authorized by the Manager of Quality Assurance - Consumables.

1.4 TEST EQUIPMENT/MATERIAL

- 1.4.1 Gurley Densometer, #4110. (See Figure 1)
- 1.4.2 Stop watch or other accurate timing device.

2.0 PROCEDURE2.1 SAMPLE PREPARATION

- 2.1.1 The test sample shall consist of five specimens of paper or card stock at least 1 7/8 inches wide and 5 inches long.
- 2.1.2 Environment for conditioning and testing shall be in accordance with TAPPI T402 (73 \pm 3.5 $^{\circ}$ F and 50 \pm 2% RH for a minimum of 2 hours).

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Date

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3.0 TEST INSTRUCTIONS

NOTE: Refer to applicable specification for actual values to be tested.

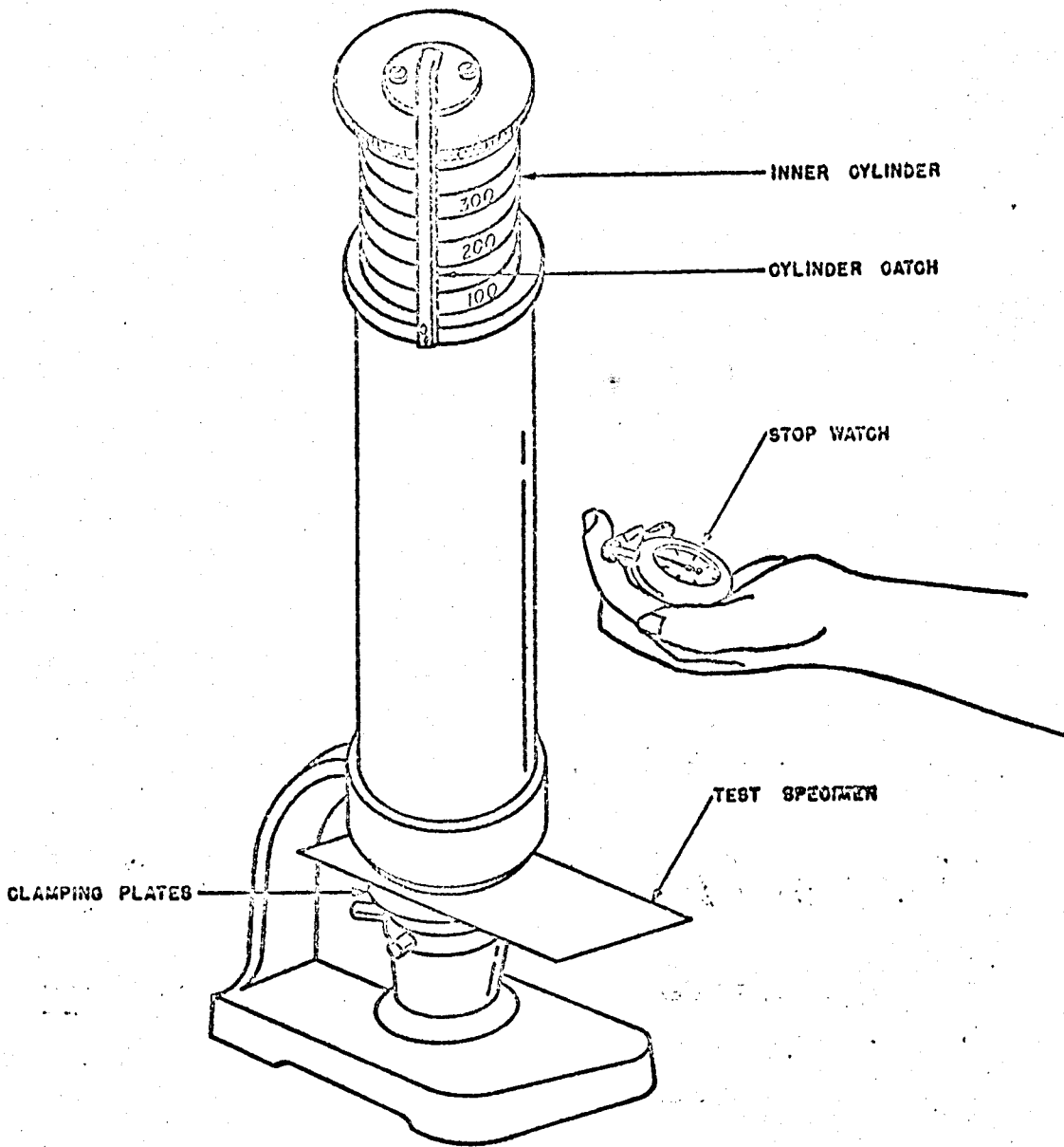
- 3.1 Set up the test instrument in accordance with the manufacturer's instructions.
- 3.2 Raise the inner cylinder until the top rim is supported by the catch.
- 3.3 Clamp the specimen between the clamping plates.
- 3.4 Lower the inner cylinder gently until it floats.
- 3.5 When a steady movement has been obtained, measure the number of seconds it takes for the inner cylinder to travel 100 ml.
- 3.6 Record the number of seconds required for the passage of 100ml of air through an area of 1 square inch of paper. Repeat steps 3.2 through 3.5.

4.0 REPORTING

- 4.1 Report the average number of seconds required for the passage of 100ml of air through an area of 1 square inch of paper.

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DENSOMETER
GURLEY

Figure 1