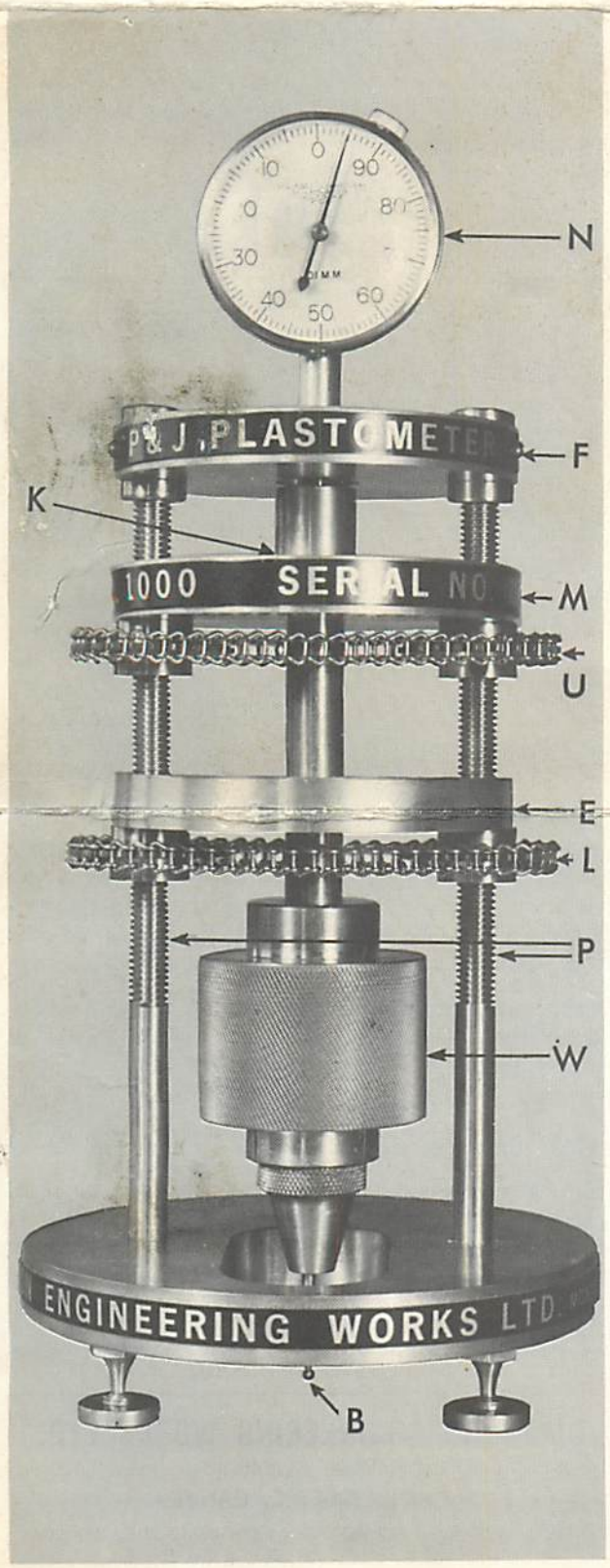
P & J PLASTOMETER

SERIES 1000

MODEL

1000



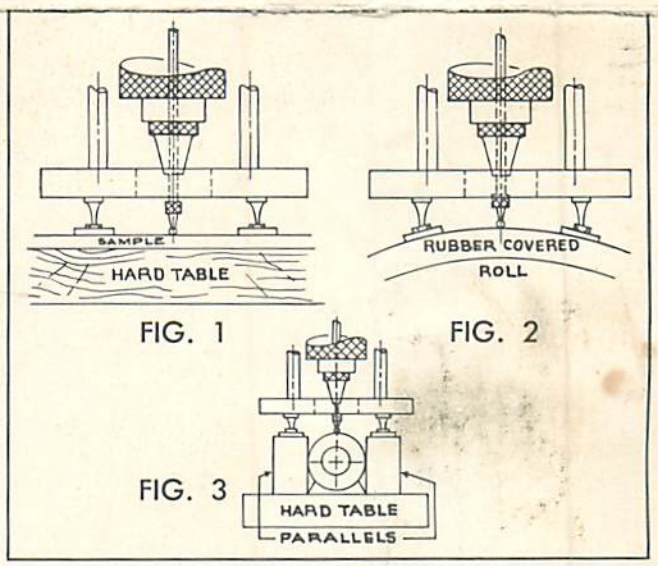
DIRECTIONS FOR OPERATING MODEL 1000

Place instrument in vertical position over sample to be tested. See Figs. 1-2-3. The table shown in Fig. 1 should be a true flat surface so that the Plastometer will not rock or be unsteady, whether its feet rest on a large flat sample as shown, or whether its feet rest on the table around a small sample.

Be sure that the kilogram weight hangs on the upper surface of the disc M by the shoulder K of the hollow weight shank or tube.

Lower the ball B and stem, by turning the lower sprocket L from right toward left, until the ball touches the test piece, and index hand of the gauge N makes three complete revolutions. Set gauge dial to zero by turning Bezel and particularly being sure that the weight W does not rest on the shoulder of the ball Holder B.

Lower the kilogram weight W by turning the upper sprocket U, from right toward left, until the weight W



(Show example of how plastometer is placed under sample)

rests completely on the shoulder of the ball holder B, and keep on moving the sprocket until the upper side of the disc M shows a space of about 3/16 of an inch below the shoulder K of the hollow weight shank or tube.

As soon as the weight W begins to press on the shoulder of the ball holder B it begins to depress the ball down in the sample, and the index hand of the gauge N begins to turn round and indicate the depth of the depression in hundredths of a millimeter.

When the weight W is fully carried on the shoulder of the ball holder B as is shown by the gap between the disc M and the shoulder K, a minute of time is allowed to pass, and then the reading of the gauge is taken as the standard plastometer reading.

Make three such tests in slightly different places on the sample and take their average as being a better indication of the sample than just one reading.

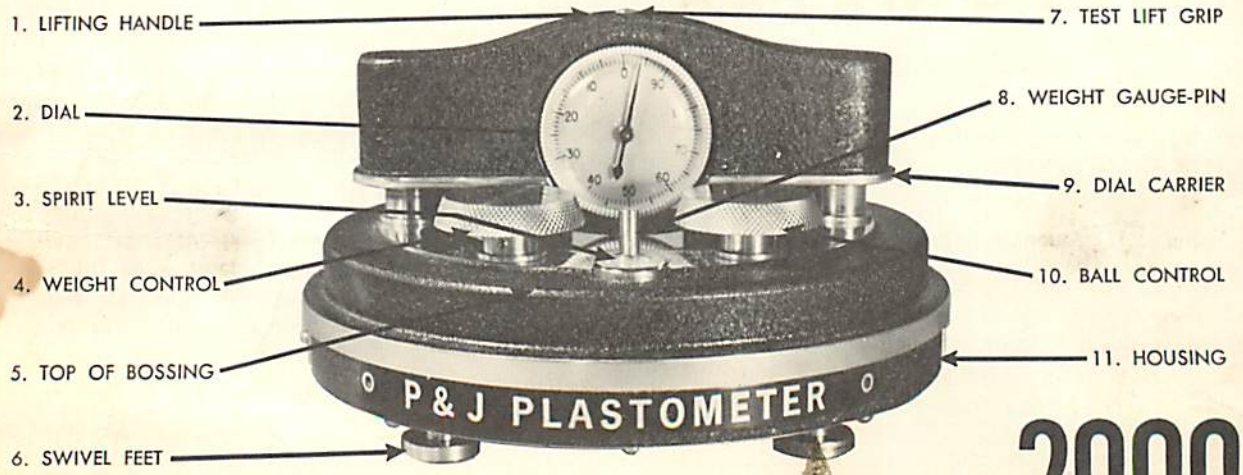
It is considered that practically all rubbers used in Paper Mills are best tested with the ⅛" ball on the lower end of the Plastometer needle.

The Plastometer is regularly sold by Dominion fitted with one Stem and one Ball ⅛" diameter.

Practically all mechanical rubbers are best tested with the ⅛" ball on the lower end of the Plastometer needle, and this ball is the one used by the rubber manufacturers.

PLASTOMETER

SERIES 2000



P & J PLASTOMETER MODEL 2000

TEST PROCEDURE

The Plastometer should be firmly set upon the curved surface of the rubber covered roll so that the centerline of the indentor shaft is vertical and also perpendicular to the tangent at the point of contact of the indentor (⅛ inch ball), as verified by centering the bubble in the spirit level mounted on the Plastometer frame.

The indentor should then be lowered until contact is made with the specimen and the lowering continued until the dial hand has made three complete revolutions. Set gauge dial to zero by turning Bezel. Without shock, the weight should then be lowered to the full extent of its travel. After the lapse of 60 seconds (during which there will be plastic flow adjacent to the indentor), the indentation value should be read from the indicator dial.

Three readings should be taken at as many different positions on the specimen: in the case of a roll, at its middle and 6 inches from its ends. For comparative tests, the reading should be taken at the same temperature, preferably 70°F. ± 2°. In other words, the test roll should be subjected as nearly as possible to this temperature until equilibrium is indicated by constant readings of the Plastometer taken at intervals of two hours.

REPORT METHOD

The average of at least three readings made as above specified should be reported as the Pusey and Jones Plastometer Reading. If the temperature is other than 70°F. ± 2°, the report should so indicate.

OPERATING INSTRUCTIONS Model 2000

1. Before removing the Model 2000 Plastometer from its case, try control knobs (4) and (10) in order to be sure that they are turned fully anti-clockwise.

2. Using lifting handle (1) place the Plastometer on top of the rubber surface to be tested. Whether the surface is curved or flat, center the bubble in the spirit level (3) in order to assure plumbness.

3. Then turn indentor (ball) control knob (10) clockwise until the hand on dial (2) has made three complete revolutions. Set gauge dial to zero by turning Bezel.

4. Immediately thereafter, turn weight control knob (4) clockwise until the top of weight gauge pin (8) is so lowered as to be flush with top of bossing (5) (through which the pin penetrates).

5. When the pin becomes flush with the bossing, note the time.

6. Sixty seconds thereafter, note the dial reading and record it. The reading will indicate the depth (in hundredths of a millimeter) of the depression made by ball in rubber surface and this will represent the indentation value above mentioned, which is referred to as the Pusey and Jones Plastometer Reading.

7. In order to reset the Plastometer for succeeding tests: First, turn weight control knob (4) anti-clockwise as far as it will rotate. Second, do the same with the ball control knob (10). Be sure not to reverse this reset sequence lest the full load of the weight be imposed needlessly on the spindle of dial (2).

8. Repeat the foregoing sequence for subsequent readings.

9. Before returning the Plastometer to its case, ball control knob (10) and weight control knob (4) should both be turned fully ANTI-CLOCKWISE so that the weight and the dial carrier (9) are snugly abutted against their respective stoppers, which are an integral part of lifting handle (1).

PROCEDURE FOR SMALL ROLLS

The P & J Plastometer has recently been modified to make possible accurate rubber-hardness readings on roll diameters down to approximately four inches.

For roll diameters between eight inches and four inches, simply remove the four swivel feet using the ⅜" wrench supplied in the carrying case, and re-locate in the minor-pitched holes provided in the baseplate making certain that all the feet are tightened up to the shoulder of each foot. Normal operating sequence may then be followed.

For measuring rubber hardness of small flat work pieces, the instrument may be placed on parallel blocks of suitable height to suit the thickness of the piece being tested.

RE-CALIBRATION

Each Plastometer is marked with a registered serial number and is factory inspected and calibrated before shipment. If the need for recalibration becomes apparent or should the instrument be damaged, it should be packed securely in its carrying case, wrapped and returned, express prepaid, to

APPROVED BY A.S.T.M.

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