

## TABER® STIFFNESS TESTER - MODELS AND ACCESSORIES



### DESCRIPTION

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The TABER® Stiffness Tester is used to assess material stiffness and material resiliency.

The TABER® Stiffness Tester provides accurate test measurements to  $\pm 1.0\%$  for specimens with a thickness of 0.004" to 0.219". With the TABER® Stiffness Tester materials such as paper products, cardboard, plastics, textiles, metals, felts, tubing, wire, rubber and other sheet materials can be evaluated.

Important part of the TABER® Stiffness Tester is a pendulum weighing system. Providing an accurate and responsive method for measuring small load increments, this system is a critical component for determining material stiffness or resiliency. Nine (9) distinct measuring ranges permit testing of materials that are extremely lightweight and flexible (for instance thin metallic foils) to items that are very rigid (like plastics).

With the specimen clamp Test specimens are mounted on the Stiffness Tester. Located on the pendulum, the lower faces of the specimen clamp jaws are exactly on the center of rotation, thus ensuring a constant test length and deflection angle for accurate and repeatable results. Both jaws of the specimen clamp are adjustable, so the test specimen can be positioned precisely in the center no matter how thick the material is.

A pair of rollers apply force to the lower end of the specimen. These rollers are attached to a driving disc located directly behind the pendulum, and push against the test specimen and deflect it from its vertical position. The pendulum applies increasing torque to the specimen as it deflects further from its original position. All Stiffness Testers now include the ratchet stop roller which aides in test set-up and reduces the potential for inter-operator error.

The test point reading occurs when the pendulum mark aligns with the appropriate driving disc mark ( $7\frac{1}{2}^\circ$  or  $15^\circ$ ), which points to the stiffness reading on the dial point. The final reading depends on the range in which the test is being conducted (which dictates instrument set-up and the appropriate scaling factor to use).

The instrument outputs the moment load applied to the test specimen in TABER Stiffness Units ( $g \cdot cm$ ).

### MODELS

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There are two models of the TABER® Stiffness Testers, both with bi-directional pendulum type testing in a range from 0 - 10,000 Taber Stiffness Units.

#### **TABER Stiffness Tester - Model 150-E [part# 980150-E]**

The on-board computer of the 150-E Model automatically calculates and records stiffness testing data. Stiffness readings are automatically converted to the appropriate user-selected stiffness range. Results don't have to be multiplied manually by a scaling factor. The Taber Stiffness Tester Model 150-E also calculates average, standard deviation, and high/low readings.

The Taber Stiffness Tester Model 150-E is supplied with accessory ports to either print data or download it to a PC. The non-volatile memory can store up to 1,000 readings. In addition to the internal real-time clock and calendar, stored readings can be identified with an optional user-defined label.

The 16 button keypad, offers operators the ability to select the direction, deflection and number of cycles and to perform testing in auto or manual mode.

- 115/230V, 50/60Hz
- CE approved

#### **TABER Stiffness Tester - Model 150-B [part# 980150-B1]**

The Taber Stiffness Tester Model 150-B is manually operated and based on the original Taber Stiffness Tester. The Taber Stiffness Tester Model 150-B offers the same accurate, precision test results as the Taber Stiffness Tester Model 150-E, but requires the user to record stiffness testing data, average the readings and multiply results by a scaling factor.

The Taber Stiffness Tester Model 150-B is mounted on telescoping tripod legs, lightweight, and portable. A sealed rugged housing protects the electronic components.

- 110V, 60Hz (220V operation requires ETF-14 Step Down Transformer)

### **ACCESSORIES**

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#### **Triple Cut Specimen Shear [part# 980104-11]**

To perform repeatable and reproducible tests a uniform specimen size is crucial. With the TABER® Triple Cut Specimen Shear you can prepare consistent specimens for most materials up to thicknesses of 0.020". The standard specimen size is 1 1/2" x 2 3/4". For test ranges 1 or 2, specimens must be rotated 90 degrees and cut a second time to obtain the required 1 1/2" x 1 1/2" sample size.

#### **Ratchet Stop Roller [part# 130240]**

Now standard on all models of TABER Stiffness Testers, the Ratchet Stop Roller greatly reduces the potential for inter-operator error caused by over or under-tightening. The travel on the right hand assembly stops automatically as soon as the roller comes in contact with the specimen. Now the operator can set the distance between the specimen and roller precisely, which improves the test set-up. This accessory can be retrofitted on any TABER Stiffness Tester.

#### **Sensitivity Range Attachment [part# 980150-14]**

The Sensitivity Range Attachment (also referred to as SR or High Sensitivity Attachment) is used to test the stiffness of extremely lightweight materials like cellophane, natural fibers, synthetic filaments, metallic foils, etc..

A 1 1/2" x 1 1/2" specimen is mounted between a set of pin holders, which replaces the rollers. In order to use this attachment the Compensator Range weight is required.

#### **Range Weights**

To test specimens below 10 stiffness units, the Compensator Range Weight is required. Specimens above 100 stiffness units require additional range weights as determined by the test set-up chart.

- Replacement Compensator Range Weight - 10 Taber Units [part# 120815]
- Replacement Range Weight - 500 Taber Units [part# 120753]
- Replacement Range Weight - 1000 Taber Units [part# 120752]

- Replacement Range Weight - 2000 Taber Units [part# 120751]
- Auxiliary Range Weight Set - range 3000 - 5000 Taber Units [part# 125656]
- Case for Range Weights [part# 120888]

## **CALIBRATION SPECIMENS**

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To confirm the proper operation of your Stiffness Tester, TABER offers five spring steel calibration specimens. Each specimen is electro-etched with the exact rating before leaving the factory.

- Calibration Specimen 62 [part# 125390-1]
- Calibration Specimen 225 [part# 125390-2]
- Calibration Specimen 440 [part# 125390-3]
- Calibration Specimen 565 [part# 125390-4]
- Calibration Specimen 1060 [part# 125390-5]

## **DISCLAIMER**

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The right of technical modifications is reserved.

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