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Instruction Manual
SD

Model: SD, Spring Tester

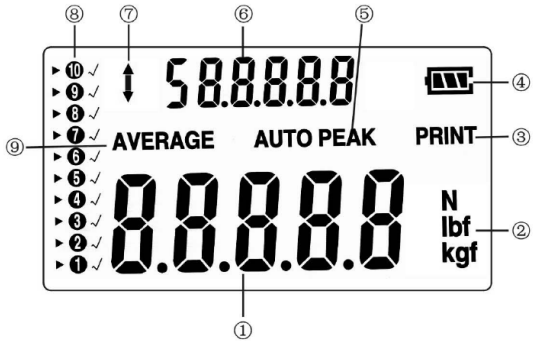
Thank you for buying a SAUTER Spring Tester. We hope you are pleased with your high quality force gauge with its big functional range. If you have any queries, wishes or helpful suggestions, do not hesitate to call our service number.

1. Working Conditions

10°C to 30°C / 15% up to 80% humidity

2. Operation

a. Display



(1) Measuring Result
(2) Measuring Units
(3) Activation of PRINT Function
(4) Indication of power charging status
(5) PEAK or AUTO-PEAK Mode
(6) Average value of stored peak values
(7) Force direction
(8) Occupancy of storing spaces
(9) AVERAGE- or Saving Mode

b. Operating keys

ON / OFF: POWER

ON / OFF key (For ON, press 1 sec.)

UNIT: UNIT

- Press shortly: Select unit: N, kg or lb

ZERO: ZERO

Three functions:
- Zeros the measuring result (Tara function)
- Cleans the peak value (in Peak mode)
- Saves a setting (in SET mode)

SET: SET

SET
- 1 x Press: Upper Limit [HidT]. To change press: ▲ or ▼ (see section c.)

HidT

SET
- 1 x Press: Lower Limit [LodT]. To change press ▲ or ▼ (see section c.)

Lo dT

SET
- 1 x Press: Minimum limit to save peak values in the instrument's memory. [LE.SET]. Please see section „Min Limit Peak Save". To change press: ▲ or ▼ (Only in „Peak-Mode"active) (see section g.)

LESET

SET
- 1 x Press: Auto-Off Function. Turns the instrument off after a here defined time period in sec. [P.OFF]. To change press: ▲ or ▼ (Only in „Battery-Mode" active)

P.OFF

SET
- 1 x Press: Peak-Freeze-Time [PE.2E / A.PE / HoldT]: Time period in which a peak value is being shown in the display in sec. To change press: ▲ or ▼

SET
1 x Press: Saves the Settings

PEAK:

Three functions PEAK
- Track mode (continuous measurement)
- Peak mode (capture of maximum values)
- Auto-Peak mode, same as Peak-mode, only without the „Min limit peak save" function

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MEMORY: 

Saves the peak values to calculate the average value (please see section “Memory mode”

DELETE Function 

Deletes stored peak values (only in „Memory mode“ active)

PRINT: 

Sends the stored peak values to a PC or Printer (Please see section „Data Output)

c. <u>High / Low limit function</u>

▲ HI Higher than higher limit
◘ OK OK
▼ LO Lower than lower limit

This function allows efficient testing of OK / NOT OK measurements of similar or identical testing objects.
A lower and an upper limit value can be defined. The instrument compares the individual measuring results with these limit values and shows the OK or NOT OK result by green or red light diode and by sound.
To set these limit values, please see the SET Menu in section „Operating keys“.

d. <u>Measurement (Track Modus)</u>

Display (1) shows the continuous force in a defined direction (6)

To zero the display, press: 

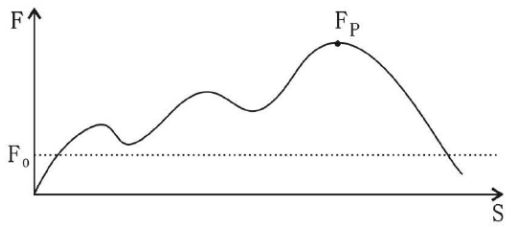
e. <u>Peak-Hold Function (Peak Mode)</u>

Please press: 

f. <u>Auto-Peak-Hold-Function (Auto-Peak Mode)</u>

Please press: 

g. <u>Min limit peak save</u>



This function allows to eliminate unwanted „Pre-Peak values“ that are lower than the main peak value (Fp). The “Min limit peak save” value (Fo) takes care, that these “Pre-Peak values” are not saved.

The „Min limit peak save“ function is only in the Peak-Mode possible.

To set this Min limit value, please see the SET Menu in section „Operating keys“.

h. **<u>Memory mode</u>** <u>and average value</u> (from up to 10 peak values)

Saving peak values in the instrument

⇨ Activating the „AUTO PEAK Function“ by PEAK key

⇨ Deactivating the „Average Function“ by MEMORY key

⇨ Now, all peak values are stored automatically in the instrument

⇨ To browse through the stored values, please use the ▲ or ▼ keys. (The values will be shown in the upper display segment)

⇨ By pressing the MEMORY key, the average value of the stored peak values can be shown (in the upper display segment)

⇨ To delete every stored value, press the▼-key in the AVERAGE-Mode

3. Thread of the fine adjustment screw

The following is valid for small Spring Testers (SD 10, 20,30) and those of medium size (SD 50, 100, 200, 300, 500):
The thread of the fine adjustment screw is a thread of DIN M6, the flank lead is respectively to this DIN, which is approximately 1mm per turn of the knurled nut.

4. Printer output

<u>Below there are two pictures:</u>
The first one shows the printer compartment closed, on the left side of the spring tester. The paper roll with the printed

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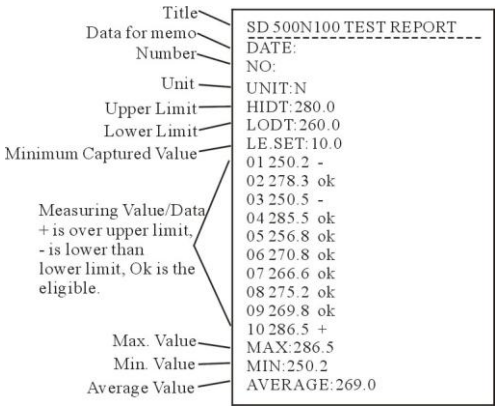
measurement results is sticking out, in the way it comes out of the small guide trench.
On the right side of the compartment you can find a small button, which has to be pressed to open the compartment for changing the paper roll.

The second picture, see below, shows the open paper roll compartment. It is shown how the paper roll has to be inserted correctly into the compartment for succeeding printing operations.
To close it, the button on the right has to be pressed during closing the compartment. A small piece of paper has to stick out.

Below you see the printing output with all necessary information:



5. Warning

Intended use
The instrument you have acquired serves to determine the measuring value of the material to be measured. It is intended to be used as a “non-automatic“ instrument, i.e. the material to be measured is manually and carefully attached at the instrument. The measuring value can be read off after a stable measuring value has been obtained.

Inappropriate use
Do not use the instrument for dynamic measuring. In the event that small quantities are removed or added to the material to be measured, incorrect measuring results can be displayed due to the “stability compensation“ in the instrument. (Example: Slow draining off of liquid from a container suspended from the instrument). Do not attach a continuous load. This can damage the measuring unit as well as the parts, relevant to safety.

Prevent jolts, torsion and oscillation (e.g. by appending slopingly) of all kinds. Be sure to prevent overloading the instrument in excess of the stated maximum load (max.), minus any tare weight that may possibly exist. This could damage the instrument (risk of breakage).

Important:
• Always make sure that there are no people or materials below the load that could be injured or damaged!
Never operate the instrument in hazardous locations. The series design is not explosion-proof. Structural alterations may not be made to the instrument. This can lead to incorrect measuring results, faults concerning safety regulations as well as to destruction of the instrument. The instrument may only be used in compliance with the described guidelines. Varying areas of application/ planned use must be approved by SAUTER in writing.

Guarantee
The guarantee is not valid following

• non-observation of our guidelines in the operating instructions

• use outside the described applications

• alteration to or opening of the device

• mechanical damage and damage caused by media, liquids

• natural wear and tear

• inappropriate erection or electric installation

• overloading of the measuring equipment

6. CE Declacation of conformity

SAUTER

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Konformitätserklärung

Declaration of conformity for apparatus with CE mark
Konformitätserklärung für Geräte mit CE-Zeichen
Déclaration de conformité pour appareils portant la marque CE
Declaración de conformidad para aparatos con marca CE
Dichiarazione di conformitá per apparecchi contrassegnati con la marcatura CE

English We hereby declare that the product to which this declaration refers conforms with the following standards.

Deutsch Wir erklären hiermit, dass das Produkt, auf das sich diese Erklärung bezieht, mit den nachstehenden Normen übereinstimmt.

Français Nous déolarons avec oela responsabilité que le produit, auquel se rapporte la présente déolaration, est conforme aux normes citées ci-après.

Español Manifestamos en la presente que el producto al que se refiere esta declaración est''a de acuerdo con las normas siguientes

Italiano Dichiariamo con ciò che il prodotto al quale la presente dichiarazione si riferisce è conforme alle norme di seguito citate.

Electrical spring tester: SAUTER SD

Mark applied	EU Directives	Standards
CE	89/336EEC EMC 92/31 EC 93/68 EEC 2004/108 EC	EN 61326-1 :2006

Date: 13.05.2007 **Signature:**

SAUTER GmbH
Management

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