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Instruction manual spring testing system

SAUTER SD

Version 2.0
04/2020
GB

PROFESSIONAL MEASURING

GB

SAUTER SD

V. 2.0 04/2020

Instruction manual spring testing system

Congratulations on your purchase of the SAUTER TVO or the THM test bench. We hope you enjoy your quality measurement system with its wide range of functions and high reproducibility. If operated correctly, this high-quality product will give you many years of use.
For questions, wishes or suggestions we are always at your disposal.

Table of contents:

Scope of delivery

- SAUTER SD
- Power cord
- Instruction manual
- Additional descriptions

1 Weight and dimensions

Test bench	SD 50N100	SD 100N100	SD 200N100	SD 300N100	SD 500N100
Dimensions (LxWxH)	300x235x620mm				
Weight	21kg				

2 Check before use

After receipt of the test stand, it should be checked in advance whether no transport damage has occurred, whether the outer packaging, the metal housing, other parts or even the test stand itself have been damaged. If any damage is evident, please notify SAUTER GmbH immediately.

3 Possible applications

The TVS test stand has been designed to accommodate most SAUTER force measuring devices without any great difficulty. It has a wide range of applications and can be operated manually. It can also perform individual functions independently. These includinfinitely variable speed adjustment, automatic up and down movement with presetting of repetitions (up to 1000 cycles). It can be used for material testing in the metal, plastics and textile industries. It can also be operated with SAUTER software (AFH) and can be conveniently controlled from there using a PC. This software is also able to document force, time and distance. It can only be operated with an FH force measuring device, because here the setting options of the same can be used, for example to protect the test stand from overload with the STOP value.

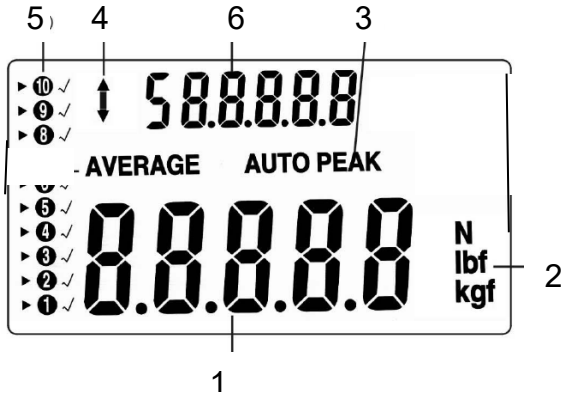
- Choose the right test stand with regard to the maximum force you require. Adapt the force measuring device used to the maximum force or take special care when setting the travel distance. (Possible destruction of the force gauge)
- Under no circumstances should you attempt to open, repair or modify the machine. Please contact SAUTER GmbH.
- The test stand is not suitable for operation in a humid environment. Avoid penetration of moisture into the housing under all circumstances.
- Do not use sharp objects to operate the keys.
- Use the limiting rings on the test bench to control the travel. Precise adjustment of the travel distance by means of the limiting rings prevents damage to the test stand and the force gauge used.
- From time to time, moisten the rods with a lubricating oil.
- Switch off the unit and unplug the power cord if you are not going to use it for a long period of time.

4 Technical data

Test bench	SD 50N100	SD 100N100	SD 200N100	SD 300N100	SD 500N100
Maximum force	50 N	100 N	200 N	300 N	500N
Readability	0,01N	0,02N	0,05N	0,1N	0,1N
Maximum stroke length	100mm				
Maximum measuring room height	100mm				
Working temperature	20±10°C				
Storage and transport temp.	-5°C~40°C				
Relative air humidity	15%~80%				

5 Operation

5.1 Display



(1) Measurement result
(2) Display unit of the measurement result
(3) PEAK indicates that peak hold mode is activated AUTO PEAK keeps the peak value in the display only for a defined time (see 2.4)
(4) Display of the direction of force
(5) Assignment of the memory locations
(6) Average value or individual peak value

5.2 Control keys

ON / OFF: POWER

On / Off button
(press the key for approx. 1 second)

UNIT: UNIT Measuring units

- Press the key briefly: Selection between N, kg and lb

ZERO: ZERO Zero position

Assignment with three functions:

- Zero setting of the display (tare function)

- Zeroing of the peak value (Peak)

- Saving a setting (in SET mode)

SET: SET

SET Press once: Upper limit [HidT]. Press to change it: ▲ or ▼ (see 2.3)

Hi dT

SET Press once: Lower limit value [LodT]. Press to change it: ▲ or ▼(see 2.3)

Lo dT

1 x SET Press: Lower limit value to activate the memory function at Peak value measurements (peak). [LE.SET / Lo Pe]. See also section 2.7. Minimum limit function To change: ▲ or ▼ (Only in "Peak Mode") activated) (see 2.7.)

LESET

SET Press once: Auto-Off function, switch off when not in use after Adjustable time interval in seconds [P.OFF]. To change: ▲ or ▼ (Only activated in battery mode)

P.OFF

R.PE

PEAK: (peak value) 

Assignment with three functions:
- continuous measurement
- Peak (peak value recording)
- Auto-Peak, like Peak function, but without minimum limit function
(see section 2.6)

MEMORY: (memory function) 

Saves the peak values for calculating the average of the measurement results (see section - Saving)

DELETE FUNCTION:

of memory values (only in "Memory" mode)

PRINT: (print function) 

Output of the memory contents to PC or printer (see section 7.)

5.3 Limit value display good / bad

▲ HI Exceeding the upper limit value (LED lights up red)
◘ OKMeasured value in GOOD area (LED lights green)
▼ LOOutrunning the lower limit value (LED lights up red)

An upper and a lower limit value can be programmed. The measuring device compares the measurement result with the limit values and outputs the result in red or green light diodes and with an acoustic signal.
For setting the limit values see SET menu under "Keys

5.4 Simple measurement (track mode)

Display of the currently acting force and direction of force (arrow)

Zero position through: 

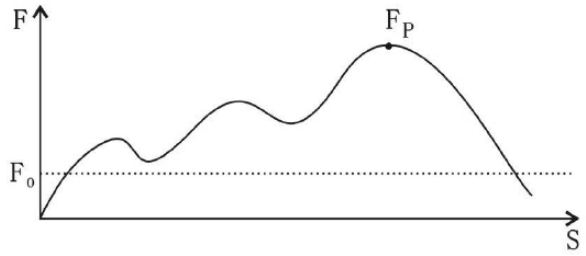
5.5 Peak hold function (peak mode)

Switch over by: 

5.6 Auto Peak Hold Mode (Auto Peak Mode)

Switch over by: PEAK

5.7 Minimum limit value function to activate the measured value storage



This function is used for measurements where unwanted "pre-peaks" occur which are below the peak value (Fp) being searched for. The adjustable limit value (Fo) prevents the measuring instrument from storing the "pre-peaks".

Minimum limit function is only possible in "Peak Mode

Setting the minimum limit value function see SET menu under "Keys

5.8 Storage of peak values and calculation of average values from up to 10 measured values

- Storage of the peak values in the measuring device

- Activation of the "AUTO PEAK function" via the PEAK key

- Now all peak values are automatically transferred to the device memory. (From the 11th value onwards, the oldest entry is automatically overwritten)

- Individual peak values can be recalled using the arrow keys (shown in the upper display segment)

- Press the MEMORY key to call up the average value (visible in the upper display segment)

- Deleting the memory contents by pressing the ▼ key in AVERAGE mode

5.9 Reset key

This is located on the right side of the housing.

It is used to restart the unit after an operating error. Memory values and settings are deleted.

6 Thread of the fine adjustment screw

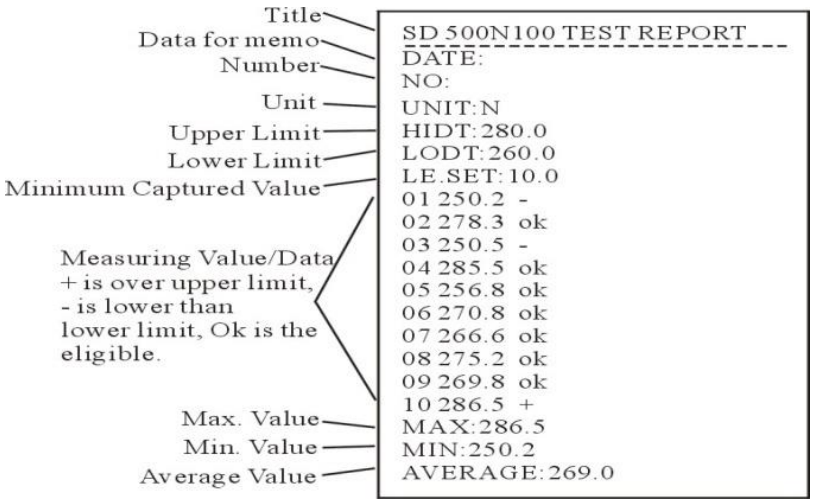
This applies to the following SD's: SD 50, 100, 200, 300, 500
The thread of the fine adjustment screw is a DIN M6 thread, according to this DIN is also the pitch.
It corresponds to approx. 1mm per turn of the knurled nut.

7 Printout to printer or PC

Below are two photographs:
The picture below shows the closed compartment for the printer's paper roll, which is located on the side of the spring tester. A piece of paper with the printed measurement results can be seen from the outside. It leaves the paper roll compartment through a narrow guide slot during printing. On the right side of this tray is a small button which must be pressed to open it, e.g. when a new paper roll has to be inserted.

The next figure shows the open paper tray. It shows how to correctly load the paper roll in the paper roll compartment to make subsequent prints.
To close this tray, press and hold the button on the right while closing the paper roll compartment. A small piece of paper should still be sticking out.

The following is a printout of such a printout with all the necessary information:



8 Warnings

Incorrectly performed force measurements can lead to serious injury to persons and damage to property and must therefore only be performed by trained and experienced personnel.

In particular, it must be avoided that forces act on the purchased measuring instrument which exceed the maximum load (Max) or which do not act axially on the instrument via the force transducer.

Improper use

Overloads

Loads greater than 150 % of the measuring range minus any existing tare load should be avoided at all costs. This could damage the measuring device (danger of breakage!).

Attention:

Never operate the measuring instrument in rooms where there is a risk of explosion. The standard version is not Ex-protected.

The spring test system must not be modified in its design. This can lead to incorrect measurement results, safety-related defects and the destruction of the measuring device.

The device may only be used in accordance with the described specifications.

SAUTER must give written approval of any different areas of use / application.

Warranty

Warranty expires with:

- Non-compliance with our specifications in the operating instructions
- Use outside the described applications
- Modification or opening of the device, mechanical damage, and damage by media, liquids
- natural wear and tear
- improper setup or electrical installation
- Overload of the measuring unit

Test equipment monitoring

Within the scope of quality assurance, the metrological characteristics of the measuring instrument and any test weight must be checked at regular intervals. The responsible user has to define a suitable interval for this purpose as well as the type and scope of this inspection.
Information regarding the inspection equipment monitoring of measuring instruments as well as the necessary test weights are available on the KERN homepage (www.bilancekern.it).

Observe the information in the operating instructions

Please read these operating instructions carefully before commissioning, even if you already have experience with SAUTER measuring instruments.

Staff training

The device may only be operated and maintained by trained staff.

Note:
To view the CE declaration, please click on the following link:
https://www.bilancekern.it