SAUTER

Manual test stand

TVL / TVL-XLS / TVL-O / TVL-E

PROFESSIONAL MEASURING

Original version

Operating instructions TVL / TVL-XLS / TVL-O / TVL-E

Version 3.1
2024-03
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Version 3.1 2024-03

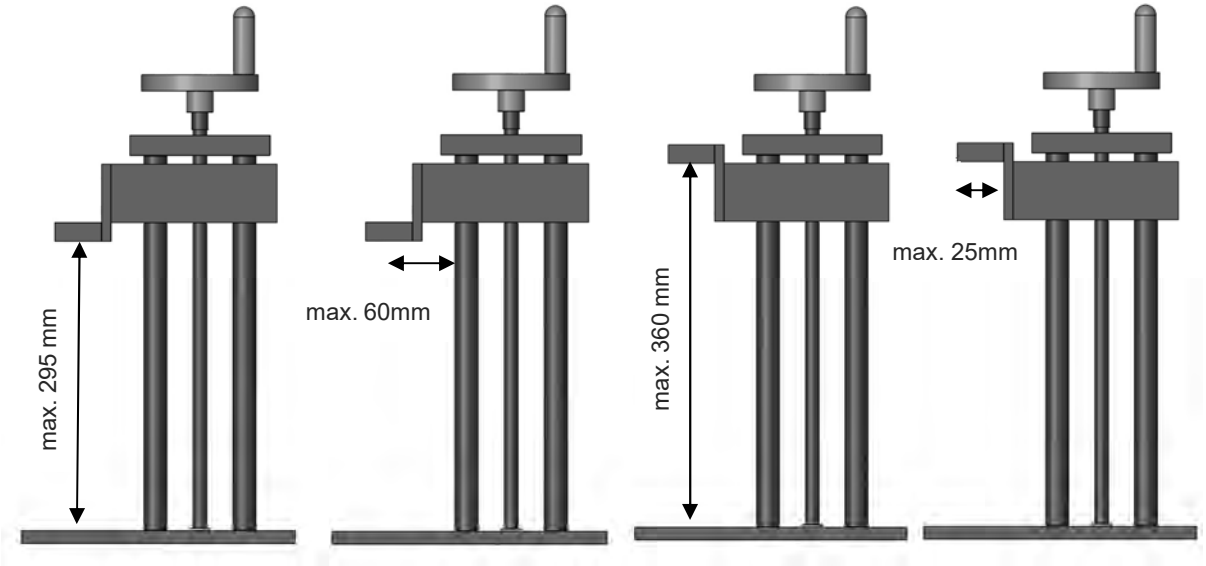
Table of contents:

1 Technical data

1.1 Technical data manual test stand

Sauter model	TVL/TVL-O	TVL-XLS	TVL-E
Maximum force	1000N	500N	2000N
Measuring direction	Vertical and horizontal		
Spindle stroke per revolution	3mm		2mm
Thread hook/load cell	M6		M12 or M6 with AFM 77 adapter
Spindle height from base plate	300mm		350mm
Thread of the meter mounting plate	4x M3 (included in the scope of delivery)		-
Workspace	approx. 230mm	approx. 570mm	approx. 295 - 360mm
Weight	8kg	15kg	9kg

TVL-E workspace:



1.2 Technical data length measuring device LA (not for TVL-E and TVL-O)

	TVL	TVL-XLS	TVL-E/TVL-O
Scale length	200mm		No length measuring device LA included in the scope of delivery
Readability	0.01mm		
Control buttons			
On/0	• Switch on • Zeros of the LA display		
mm/in	Changing the units between millimeters and inches		
▲	Manual length preselection, upwards		
▼	Manual length preselection, downwards		

Optionally available for all test standes:

1. LB-200 (length measuring device with interface)
2. LB-A02 (Attaching the length measuring device to the test stand)
3. AFH FD (software for force-displacement measurements)

2 Declaration of conformity

The current EC/EU Declaration of Conformity can be found online at:
https://www.kern-sohn.com/shop/de/DOWNLOADS/

3 Overview of the device

3.1 Scope of delivery

- 1x manual test stand
- 1x hook for TVL, TVL-O, TVL-XLS (no hook for TVL-E)
- Operating instructions

3.2 Dimensions

TVL-E: 155x240x510 mm

TVL-XLS: 155x240x810 mm

TVL-O: 155x240x510 mm

TVL: 155x240x510 mm

4 Basic information (general)

4.1 General information on warnings

Warnings are used in these operating instructions to warn you of possible personal injury or damage to property in certain situations.

Signal word	Description
DANGER	Failure to observe the instructions will lead directly to serious injury, permanent impairment (e.g. loss of a limb) or death of the user or third parties
WARNING	Failure to observe the instructions may result in serious injury, permanent impairment (e.g. loss of a limb) or death of the user or third parties
CAUTION	Failure to observe the instructions may result in minor injuries or temporary damage to the user or third parties (e.g. minor cuts)
NOTE	Failure to observe the instructions may result in damage to property

Symbols in warning notices :

Icon	Meaning
Warning signs	Warning signs warn you of dangers that may lead to personal injury. The symbol indicates the type of hazard.
	Indicates general hazards or a danger point
	Warning of flammable substances
	Warning of explosive substances
	Warning of falling loads
	Warning of suspended load
	Warning of hand injuries
	Warning of tipping hazard

Icon	Meaning
Commandment sign	Mandatory signs prescribe measures that you must take to avoid personal injury or damage to property. The symbol indicates the necessary actions or objects to prevent damage.
	Indicates a prescribed action

4.2 Intended use

Only use the manual test stand for compression and tensile tests. The device should be stable and level during the measurement.
The device should be stored in a dry and cool environment.
If you have any questions, please contact SAUTER or visit our website www.sauter.eu.

4.3 Improper use

The manual test stand is not to be used for medical purposes.
Do not use the appliance in potentially explosive atmospheres. Attachments or modifications to the appliance are prohibited.

4.4 Warranty

Warranty expires with

- Non-compliance with our specifications in the operating instructions
- Use outside the described applications
- Modifying or opening the device
- Mechanical damage and damage caused by media, liquids, natural wear and tear
- Improper set-up or electrical installation
- Improper assembly or electrical installation

5 Basic warnings and safety instructions

5.1 Observe the notes in the operating instructions

Read the operating instructions carefully before commissioning/using the appliance, even if you already have experience with SAUTER appliances. Always keep the instructions in the immediate vicinity of the appliance.

5.2 Staff training

The appliance may only be used by persons who have read and understood the operating instructions, in particular the chapter on safety.

5.3 Security

⚠ WARNING	
	**Read all safety information and instructions.** Failure to observe the safety information and instructions may result in electric shock, fire and/or serious injury. **Keep all safety information and instructions for future reference.** ● Make sure that there are never people or objects under the load, as these could be injured or damaged! ● The design of the test system must not be modified. This can lead to incorrect measurement results, safety-related defects and the destruction of the system ● Do not operate the system in potentially explosive rooms or areas and do not install it there. ● Do not operate the system in an aggressive atmosphere. ● Do not immerse the system in water. Do not allow any liquids to penetrate the inside of the device. ● The system may only be used in a dry environment and under no circumstances in rain or at a relative humidity above the operating conditions. ● Protect the system from permanent direct sunlight. ● Do not expose the system to strong vibrations. ● Do not remove any safety signs, stickers or labels from the appliance. Keep all safety signs, stickers and labels in a legible condition ● Do not open the device

⚠ WARNING	
	**Choking hazard!** Do not leave the packaging material lying around carelessly. It could become a dangerous toy for children. ● The appliance is not a toy and does not belong in the hands of children. ● This appliance can be dangerous if it is used improperly or not as intended by untrained persons! Observe the personnel qualifications!

⚠ WARNING	
 	**Risk of injury from falling parts!** Falling parts can cause serious injuries. ● Only use suitable and technically sound lifting gear. ● Use lifting gear with sufficient lifting capacity. ● Fasten individual parts and larger assemblies carefully using lifting gear. ● Secure individual parts and larger assemblies with lifting gear. ● Ensure that the hoist cannot pose a hazard. ● Lift individual parts and larger assemblies slowly!

⚠ WARNING	
	**Risk of injury when handling in the test room!** There is a risk of injury when handling in the test room while the test system is in operation. Your hands and arms can be trapped and crushed. ● Never work in the test room while the test system is running. ● Never handle anything in the test room during a test.

⚠ WARNING	
	**Risk of tipping due to the use of heavy samples!** The test system can tip over if heavy samples are inserted off-center or if the test system is not used correctly. ● Ensure that the test system is stable. ● Never use the test system as a climbing aid.

⚠ WARNING	
 	Improper use of rechargeable or non-rechargeable batteries can cause them to catch fire, explode, emit toxic fumes or release corrosive liquids. The following therefore applies to rechargeable and non-rechargeable batteries: ● Protect from fire and heat. ● Never expose to high pressure or microwaves. ● Do not bring into contact with liquids or chemicals. ● Never bring the electrical contacts of rechargeable batteries and batteries into contact with metal objects or short-circuit them. ● Never modify rechargeable batteries, batteries and chargers. ● Batteries must never be charged. ● Never use or charge a defective, damaged or deformed battery. ● Do not use any other power supply units that do not comply with the technical specifications. Doing so may shorten the life of the battery or even cause an electric shock, which may damage the appliance or cause a fire. ● If the appliance is not used for a long period of time, the external power supply should be disconnected to prevent the appliance from burning and causing a fire. ● If you do not use the device for a long time, you should charge it every two weeks, otherwise the internal battery is easily damaged, making it impossible to use the device again

CAUTION

Risk of injury!

There is a risk of injury when working on/with the test system.

- Comply with the applicable and binding national regulations on accident prevention.
- Comply with the recognized technical rules for safe and professional work.
- Comply with the regulations on health and safety when providing and using work equipment.
- Observe the company regulations such as supervisory and reporting obligations.
- Read the operating instructions completely.
- Read the operating instructions and data sheets for external components in full.
- Observe all safety instructions in the operating instructions.
- Observe all safety signs attached to the test system.
- Always wear suitable safety equipment.
- Keep a sufficient distance from heat sources.

NOTE

- To avoid damaging the test system, do not expose it to extreme temperatures, extreme humidity or moisture.
- Do not use harsh cleaners, abrasive cleaners or solvents to clean the test system.
- Only one operator may work on the test system at a time.

The operator's workstation is located in front of the test system during operation.

6 Transportation and storage

6.1 Note

If you store or transport the device improperly, the device may be damaged. Observe the information on transporting and storing the appliance.

6.2 Storage

Observe the following storage conditions when the appliance is not in use:

- dry and protected from frost and heat
- the storage temperature corresponds to the technical data

6.3 Transportation

Always hold the test stand with two hands during transportation, e.g. on the base plate and on a guide column. Holding or transporting by the crank handle is not intended. Remove any hanging loads from the test stand before transportation.

6.4 Packaging/return transportation

Returns are only possible within the limits of the general terms and conditions. Please keep all parts of the original packaging for any necessary return transportation.

- Only the original packaging is to be used for return transportation
- Disconnect all connected cables and loose/movable parts before shipping
- Reattach any transportation locks provided
- Secure all parts against slipping and damage

7 Unpacking and commissioning

7.1 Unpacking

In the event of a return, please observe the instructions in the chapter "Packaging/return transportation

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On receipt of the appliance, you should first check that no damage has occurred during transportation, that the outer packaging, the housing, other parts or even the appliance itself have not been damaged. If any damage is apparent, please notify SAUTER GmbH immediately.

8 Functional description

8.1 TVL/TVL-O/TVL-XLS

The TVL/TVL-O/TVL-XLS test stands are designed for force measuring devices with an internal measuring cell up to 1 kN (please refer to the table in the technical data for the maximum force of the respective test stand).

The test stand should be set up on a solid surface, such as a workstand or a base plate. A SAUTER force gauge can then be attached to the test stand using the four M3 cylinder head screws provided.

There are several holes in the base plate of the test stand for attaching various accessories, such as clamps, length measuring devices, etc.

The test stand can be moved with a spindle stroke of 3 mm/revolution using the existing handwheel.

8.2 TVL-E

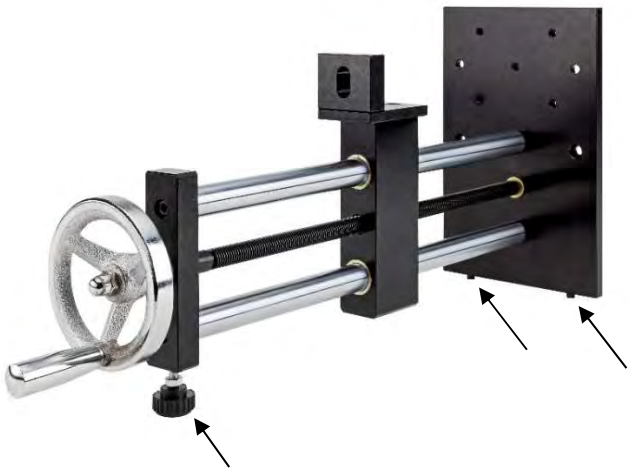
The TVL-E test stand is designed for force measuring devices with an external measuring cell up to 2 kN. The test stand should be set up on a solid surface, such as a workstand or a base plate. The external measuring cell can then be attached to the test stand using an M12 cylinder head screw or an M6 cylinder head screw using the AFM 77 adapter.

There are several holes in the base plate of the test stand for attaching various accessories, such as clamps, length measuring devices, etc.

The test stand can be moved with a spindle stroke of 2 mm/revolution using the existing handwheel.

8.3 Horizontal mode of operation

All TVL test stands can be positioned and operated horizontally using the adjustable foot and the 2 screws.



9 Maintenance, servicing and disposal

9.1 Cleaning

To prevent rust, the test stand should be cleaned with a lint-free, soft cloth after each use.

Under no circumstances should aggressive cleaning agents be used.

Do not make any changes to the appliance and do not install any spare parts. Contact Sauter GmbH for repair or device inspection.

9.2 Waste disposal

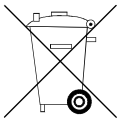
Old appliances and accessories should not be disposed of with household waste.

The operator must dispose of the packaging and appliance in accordance with the applicable national or regional legislation at the place of use.

The device consists of various components and materials, such as

- Plastic (housing)
- Metal

Disposal of rechargeable batteries and batteries:



Rechargeable batteries and batteries do not belong in household waste.

The disposal of rechargeable batteries and batteries must be carried out by the operator in accordance with the applicable national or regional law of the place of use.

10 Battery law

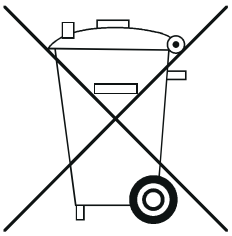
Note in accordance with the Battery Act - BattG:

INFORMATION

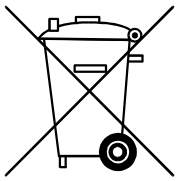
- The following information is valid for Germany.

In connection with the sale of batteries and rechargeable batteries, we are obliged as a dealer under the Battery Act to inform end users of the following:

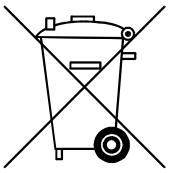
- End users are legally obliged to return used batteries and rechargeable batteries.
- After use, batteries and rechargeable batteries can be returned free of charge to municipal collection points or retailers. The normal end of use of the batteries/rechargeable batteries must be reached, otherwise precautions against short circuits must be taken.
- The return option is limited to batteries and rechargeable batteries of the type that we carry or have carried in our range and to the quantity that end consumers usually dispose of.
- A crossed-out waste garbage can means that you must not dispose of batteries or rechargeable batteries in household waste under any circumstances. Old batteries or rechargeable batteries may contain harmful substances that can damage people and the environment if not disposed of correctly.



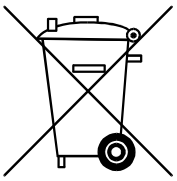
- Batteries containing harmful substances are marked with a symbol consisting of a crossed-out dustbin and the chemical symbol (Cd = cadmium, Hg = mercury, or Pb = lead) of the heavy metal responsible for the classification as containing harmful substances.



Cd



Hg



Pb