



Mechanical force gauge

FA



PROFESSIONAL MEASURING

Original version

Operating instructions for mechanical force gauge

Version 1.0
2025-07
en
FA-BA-en-2510

de

Weitere Sprachversionen
finden Sie online unter

www.kern-sohn.com/manuals

fr

Vous trouverez d'autres
versions de langue online
sous

www.kern-sohn.com/manuals

bg

Други езикови версии ще
намерите в сайта

www.kern-sohn.com/manuals

el

Άλλες γλωσσικές αποδόσεις
θα βρείτε στην ιστοσελίδα

www.kern-sohn.com/manuals

hr

Druge jezične verzije su
dostupne na stranici :

www.kern-sohn.com/manuals

lv

Citas valodu versijas
atradīsiet vietnē

www.kern-sohn.com/manuals

pt

Encontram-se online mais
versões de línguas em

www.kern-sohn.com/manuals

sl

Druge jezikovne različice na
voljo na spletni strani

www.kern-sohn.com/manuals

en

Further language versions
you will find online under

www.kern-sohn.com/manuals

it

Trovate altre versioni di
lingue online in

www.kern-sohn.com/manuals

cs

Jiné jazykové verze najdete
na stránkách

www.kern-sohn.com/manuals

et

Muud keeleversioonid leiute
Te leheküljel

www.kern-sohn.com/manuals

hu

A további nyelvi változatok a
következő oldalon
találhatók:

www.kern-sohn.com/manuals

nl

Bijkomende taalversies vindt
u online op

www.kern-sohn.com/manuals

ro

Alte versiuni lingvistice veți
găsi pe site-ul

www.kern-sohn.com/manuals

sv

Övriga språkversioner finns
här

www.kern-sohn.com/manuals

es

Más versiones de idiomas
se encuentran online bajo

www.kern-sohn.com/manuals

pl

Inne wersje językowe znajdują
Państwo na stronie

www.kern-sohn.com/manuals

da

Flere sprogudgaver findes
på websiden

www.kern-sohn.com/manuals

fi

Muut kieliversiot löytyvät
osoitteesta

www.kern-sohn.com/manuals

lt

Kitas kalbines versijas rasite
svetainėje

www.kern-sohn.com/manuals

no

Andre språkversjoner finnes
det på

www.kern-sohn.com/manuals

sk

Iné jazykové verzie nájdete
na stránke

www.kern-sohn.com/manuals



SAUTER GmbH

Ziegelei 1
72336 Balingen-Frommern
Germany



+0049-[0]7433-9933-0



info.sauter@kern-sohn.com



www.sauter.eu



SAUTER

SAUTER FA

Operating instructions for mechanical force gauge

Version 1.0 2025-07 english

Table of contents:

1	Technical	2
1.1	Technical data FA with internal load cell up to 500N	2
2	Declaration of Conformity	3
3	Overview of the device.....	4
3.1	Scope of delivery	4
3.2	Components	4
3.3	Dimensions	5
4	Basic information (general)	6
4.1	Intended use	6
4.2	Improper use	7
4.3	Warranty	7
5	Basic warnings and safety instructions.....	8
5.1	Observe the instructions in the operating manual	8
5.2	Staff training	8
5.3	Safety.....	8
6	Transport and storage	10
6.1	Note	10
6.2	Transport	10
6.3	Storage	10
6.4	Packaging/return transport	10
7	Unpacking and commissioning	11
7.1	Unpacking.....	11
8	Operation.....	12
8.1	Changing the measurement mode	13
8.2	Zeroing	14
8.3	Measurement by hand or in the assembled state	15
9	Scope of delivery	16
10	Maintenance, servicing, and disposal.....	17
10.1	Cleaning	17
10.2	Maintenance and repair.....	17
10.3	Disposal.....	17

1 Technical

1.1 Technical data FA with internal load cell up to 500N

Model	FA 5	FA 10	FA 20	FA 50	FA 100	FA 200	FA 500
Type	TFA 5-B	TFA 10-B	TFA 20-B	TFA 50-B	TFA 100-B	TFA 200-B	TFA 500-B
Capacity	5N	10N	20N	50N	100N	200N	500N
Resolution	0.05N	0.1N	0.15N	0.25N	0.5N	1N	2.5N
Measurement uncertainty	±1% of max (measuring range)						
Operating temperature	10°C to 40°C						
Max. travel	10 mm						
Weight	Approx. 600 g						
Dimensions Display unit (LxWxH)	234x66x53mm						
Thread	M6						
Accessories	Standard attachments, 5-piece set						

2 Declaration of Conformity

The current EC/EU Declaration of Conformity can be found online at:

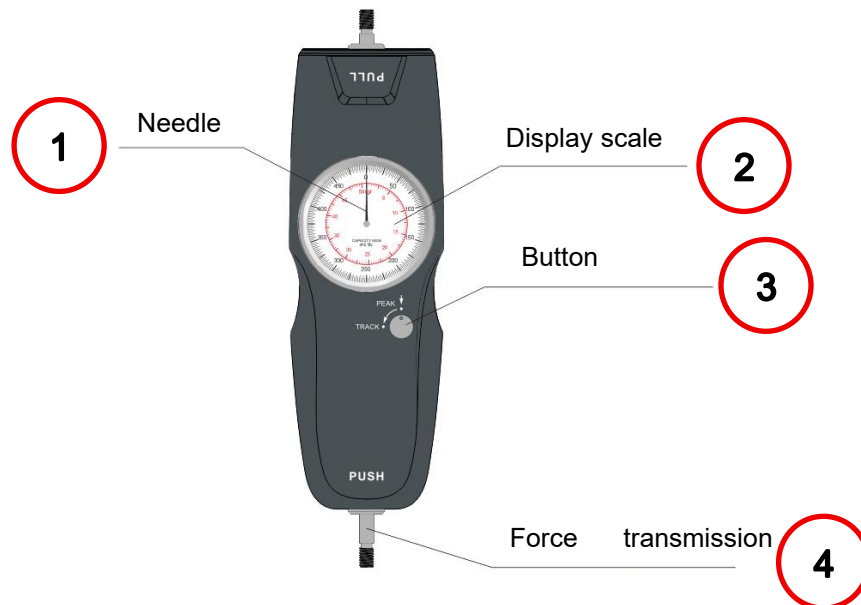
<https://www.kern-sohn.com/shop/de/DOWNLOADS/>

3 Overview of the device

3.1 Scope of delivery

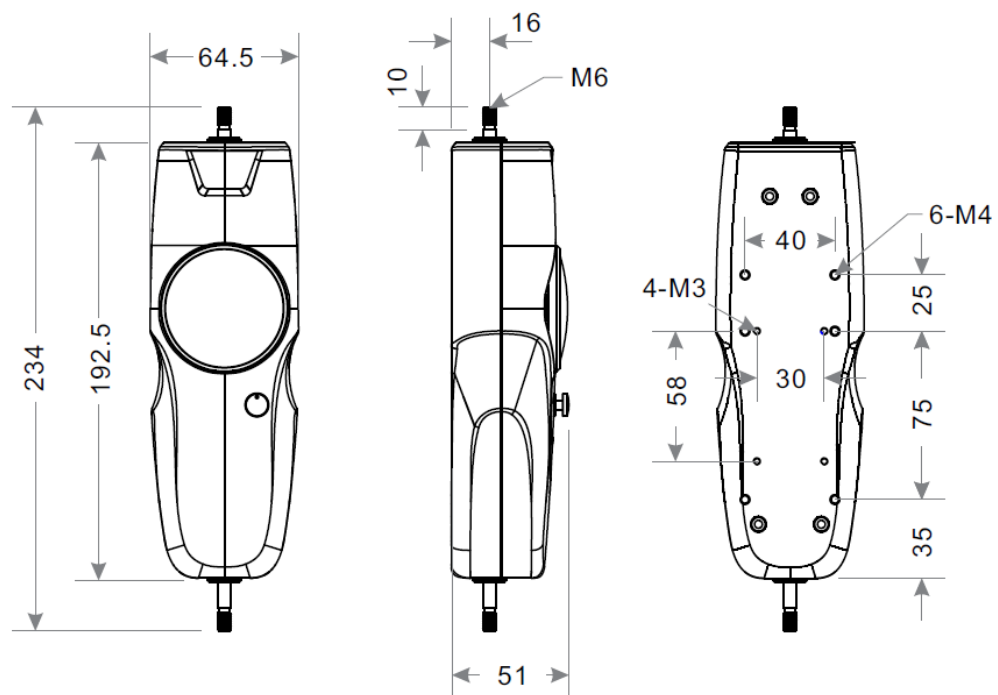
- FA
- Operating instructions
- 4x M3x12 screws for attachment to Sauter test benches
- Standard attachment, 5-piece

3.2 Components



	Description	Function
1	Dial gauge needle	Displays the force value
2	Display scale	Scale in N & kg
3	Button	Change measurement mode Track & Peak
4	Force application bolt	For adapting attachments

3.3 Dimensions



4 Basic information (general)

This operating manual uses warning notices to alert you to possible personal injury or property damage in certain situations.

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

Symbols in warning notices :

Symbol	Meaning
Warning signs	Warning signs warn you of hazards that could potentially cause personal injury. The symbol indicates the type of hazard.
	Indicates general hazards or a hazardous location

4.1 Intended use

Use the device exclusively for measuring tensile and compressive forces within the measuring ranges specified in the technical data.

To use the device as intended, only use accessories or spare parts that have been tested by SAUTER. SAUTER offers optional software and accessories to make the measuring device more versatile. Please contact SAUTER or your SAUTER supplier, or visit our website [at www.sauter.eu](http://www.sauter.eu).

4.2 Improper use

Do not use the measuring device for medical weighing.

Do not use the device in potentially explosive areas or for measurements in liquids and on live parts.

Unauthorized structural modifications, additions, or conversions to the device are prohibited.

4.3 Warranty

The warranty shall be void in the event of

- failure to observe our specifications in the operating instructions
- Use outside the described applications
- Modification or opening of the device
- Mechanical damage and damage caused by media, liquids, natural wear and tear
- Improper installation
- Overloading the measuring mechanism

5 Basic warnings and safety instructions

5.1 Observe the instructions in the operating manual



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

5.2 Staff training

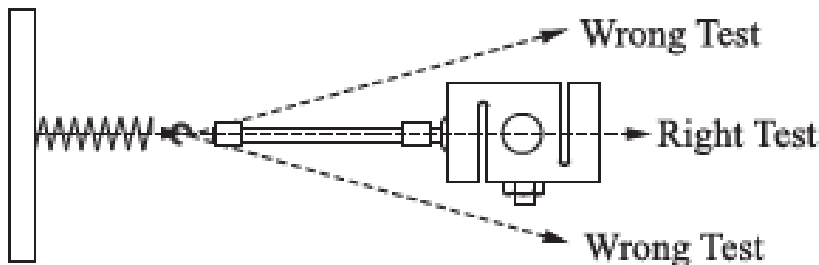
The device may only be used by persons who have read and understood the operating instructions, in particular the chapter on safety.

5.3 Safety

Incorrectly performed force measurements can lead to serious injury to persons and damage to objects and may therefore only be carried out by trained and experienced personnel.

In particular, forces exceeding the maximum load (Max) of the purchased measuring device or forces not acting axially on the device via the external force measuring cell must be avoided, as must high impulse forces acting on the measuring device.

Avoid twisting the force measuring cell, as this could damage it and, in any case, reduce the measuring accuracy.



Please prevent the measuring device from being overloaded beyond the specified maximum load (Max), minus any tare load that may already be present. This can damage the measuring device (risk of breakage!).

⚠ WARNING



Read all safety instructions and directions.

Failure to comply with the safety instructions and directions may result in electric shock, fire, and/or serious injury.

Keep all safety instructions and instructions for future reference.

- Ensure that there are never any people or objects under the load, as they could be injured or damaged!
- The measuring device must not be modified in any way. This can lead to incorrect measurement results, safety defects, and destruction of the measuring device.
- Do not operate the device in potentially explosive rooms or areas, and do not set it up there.
- Do not operate the device in aggressive atmospheres.
- Do not immerse the device in water. Do not allow liquids to penetrate the interior of the device.
- The device 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 device from constant direct sunlight.
- Do not expose the device to strong vibrations.
- Do not remove any safety signs, stickers, or labels from the device. Keep all safety signs, stickers, and labels in a legible condition.
- Do not open the device.

⚠ WARNING



Risk of suffocation!

Do not leave the packaging material lying around carelessly. It could become a dangerous toy for children.

- The device is not a toy and should be kept out of the reach of children.
- This device can be dangerous if used improperly or for purposes other than those intended by untrained persons! Observe the personnel qualifications!

CAUTION

Keep a sufficient distance from heat sources.

! NOTE

- To avoid damage to the device, do not expose it to extreme temperatures, extreme humidity, or moisture.
- Do not use harsh cleaners, abrasives, or solvents to clean the device.

6 Transport and storage

6.1 Note

Improper storage or transport of the device may result in damage. Please observe the information on transporting and storing the device.

6.2 Transport

Use the foam insert included in the scope of delivery to transport the device in order to protect it from external influences.

6.3 Storage

When not in use, store the device under the following conditions:

- dry and at room temperature () protected from frost and heat
- storage temperature corresponds to the technical data

6.4 Packaging/return transport

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

- Only use the original packaging for return transport.
- Disconnect all connected cables and loose/movable parts before shipping.
- 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 Transport."

Upon receipt of the device, you should check in advance that no transport damage has occurred and that the outer packaging, the housing, other parts, or even the device itself have not been damaged. If any damage is apparent, please notify SAUTER GmbH immediately.

8 Operation

A wide variety of measuring head adapters are included in the scope of delivery to perform a wide range of measurements. The measuring heads are mounted by hand, without tools. Do not use a deformed or damaged measuring head.

Pull test: Select the hook and mount it on the connection marked **PULL**.

Push test: Select the pressure attachment and mount it on the connection marked **PUSH**.

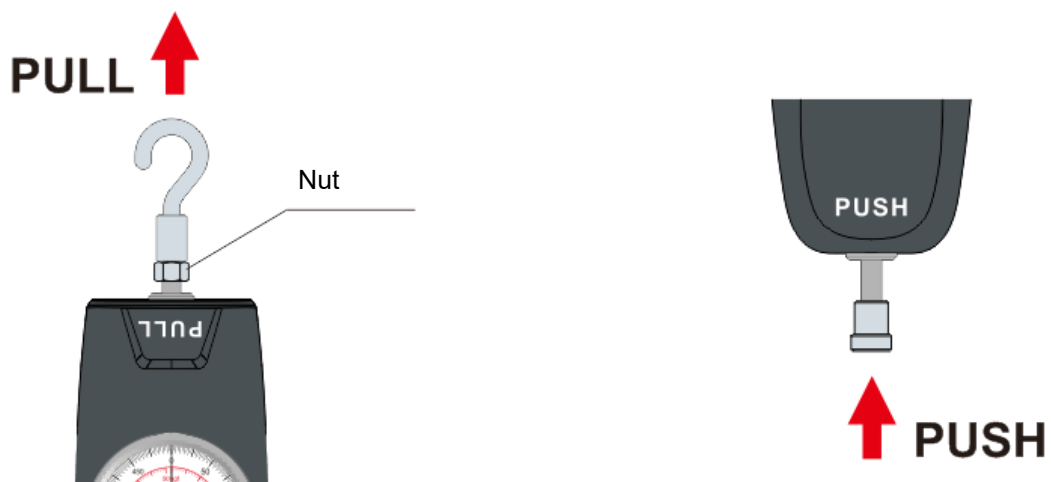
- **Extension shaft:** Can be used for extension at both ends.

- **Nut:** For locking the respective attachments.

NOTE:

Do not use tools to tighten the measuring head, as this will damage the force gauge.

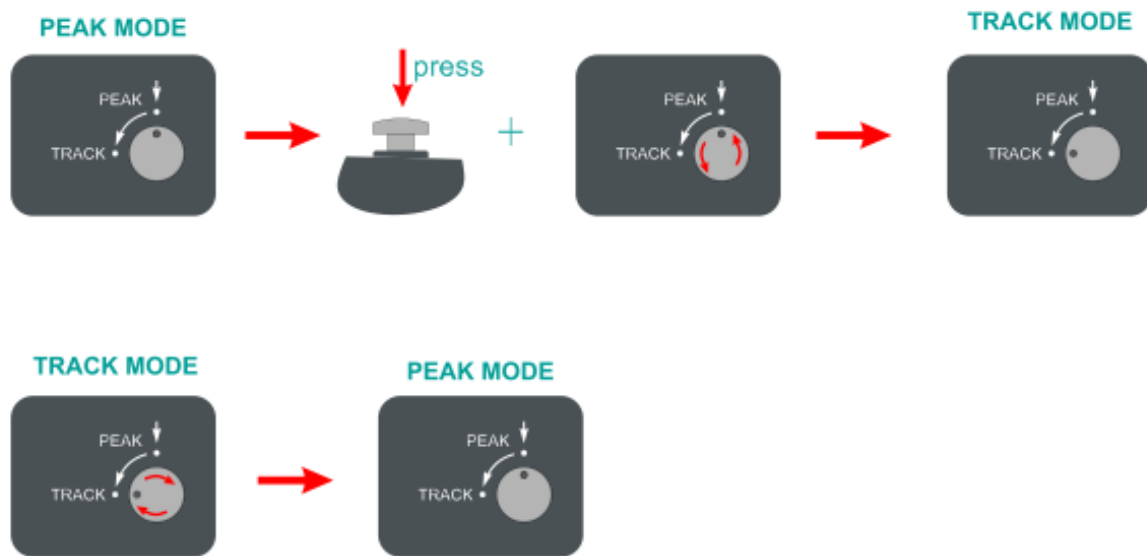
Do not install the pull attachment on the connection marked "PUSH" and do not install the push attachment on the connection marked "Pull."



8.1 Changing the measurement mode

The position of the button can be used to switch between PEAK and TRACK. Press the button in slightly and turn it to align the dot on the button • with the text TRACK or PEAK on the measuring device.

- Track: Real-time measurement mode
- Peak: The peak value does not change until a higher value is measured

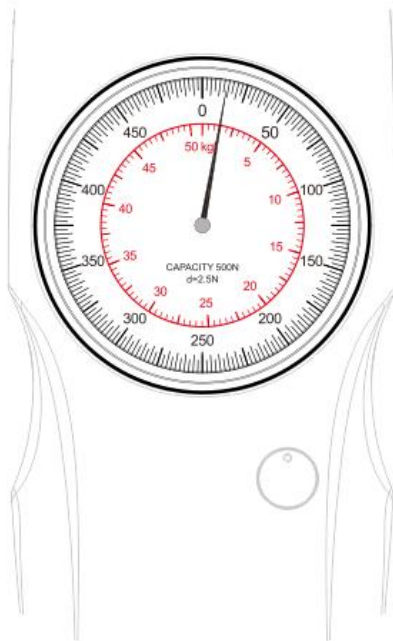


8.2 Zeroing

Position of the scale disc:

Make sure that the needle is pointing to the zero point [0] on the scale.

If this is not the case, turn the adjustable outer circle of the scale until the needle matches the zero point on the scale surface. If the button is in PEAK mode, first press the button inwards slightly.



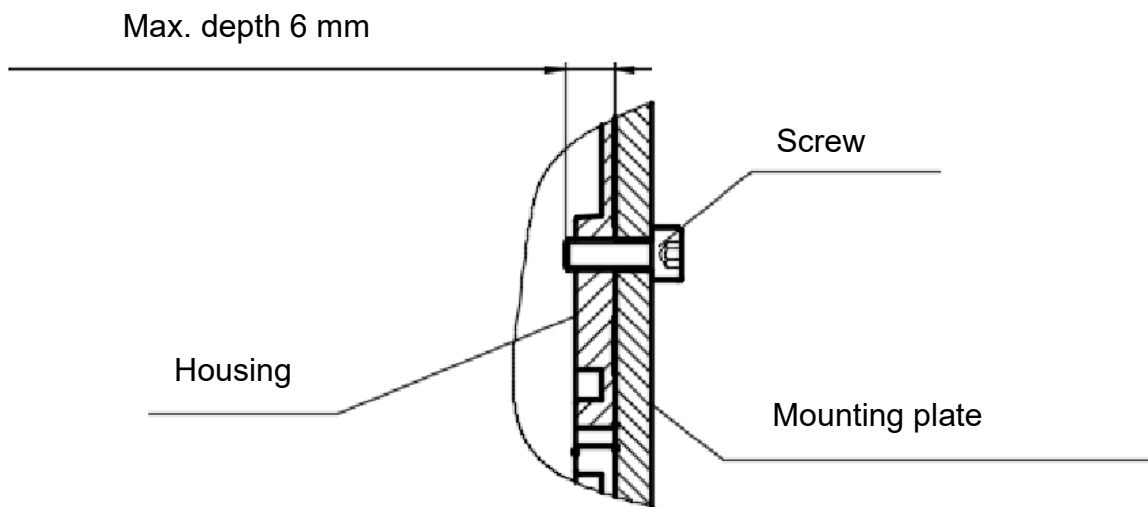
8.3 Measurement by hand or in the assembled state

The force gauge is a portable instrument; you can perform the test either by hand or on a test bench.

There are 6x M4 and 4x M3 threaded holes on the rear panel, which are to be used for mounting on a test stand..

NOTE:

The depth of the mounting hole is 5.5 mm; please select a suitable screw.

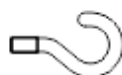


9 Scope of delivery

Machanical Force Gauge



Hook



Manual



Flat tip



Conical tip



Notched tip



Chisel tip



Extension shaft



Threaded adapter



10 Maintenance, servicing, and disposal

10.1 Cleaning

Clean the device with a damp, soft, lint-free cloth. Make sure that no moisture penetrates the housing. Do not use sprays, solvents, alcohol-based cleaners, or abrasive cleaners; only use clear water to moisten the cloth.

10.2 Maintenance and repair

Do not make any changes to the device or install any replacement parts. Contact the manufacturer for repairs or device inspections.

10.3 Disposal



Old devices and accessories do not belong in household waste.

The disposal of packaging and the device must be carried out by the operator in accordance with the applicable national or regional laws of the user location.

Improper disposal of the device can have harmful effects on humans and the environment.

Proper and environmentally friendly disposal can prevent harmful effects and allow raw materials to be recovered.