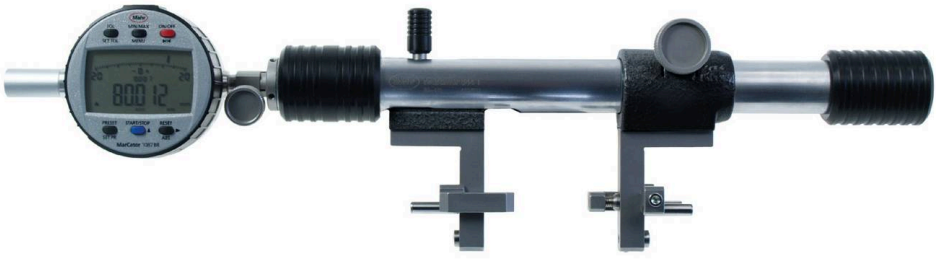
Universal Gage



Multimar 844 T

Operating Instructions

3722483

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Dear valued customer,

Congratulations on choosing a product from Mahr GmbH. Please that you follow these instructions in order to ensure the long term accuracy of this measuring instrument.
We operate a policy of continuous improvement and are constantly developing our products, especially with regard to renaming of type designations. It is possible therefore that there may be slight differences between the text and illustrations in this document and the measuring instrument in your possession. We reserve the right to make changes to the design and scope of supply, the right to undertake further technical developments, and all rights relating to translation of this documentation.

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The following symbols are used in these operating instructions:

General information

Important information

Attention - Danger

Failure to follow instructions marked with these symbols can cause inaccurate results and lead to considerable damage to this product!

Introduction

Intended working conditions

The Universal Gage Multimar 844 T is a versatile precision measuring instrument which can be employed in both production and in inspection areas to measure the following: External and internal dimensions, External and internal threads, Centering shoulders, Narrow collars, recesses and grooves, External and internal tapers, External and internal tooth profiles / gears and much more.

In order to achieve the best use of this measuring instrument it is very important that you first read these operating instructions!

The scope of supply of the Multimar 844 T includes:

- Multimar 844 T (excludes an indicating instrument)
- Wooden transport box
- 2 wooden vee-blocks (can be used as a secure storage rack or as a practical mounting aid)
- 4 fixing screws for the measuring arms (cheese head screws M3x8)
- Operating instructions

Safety information

This measuring instrument complies with the relevant safety regulations. It was dispatched from our production facility in a flawless condition and perfect working order. However, failure to follow the instructions given below can cause personal injury or death.

1. Before you connect up and use this measuring instrument for the first time, please read the accompanying documentation (operating instructions).

2. Keep the documentation close to the measuring instrument ready for quick reference.

3. Follow all safety precautions, accident prevention regulations and internal company rules and guidelines. If necessary you should request further information from your company safety officer.

4. The Multimar 844T in conjunction with the appropriate indicating instrument and accessories are subject to inspection equipment monitoring. For this reason, regular inspection equipment monitoring performed by either the user or Mahr Service must ensure compliance to the specified error limits.

Important hints prior to using the Multimar 844T

! The measuring instrument may only be used for its intended purpose. For damages caused by other usage or as a result of the incorrect application of this measuring instrument, no liability will be accepted.

Confirmation of traceability

We declare under our sole responsibility that this product is in conformity with standards and technical data as specified in our sales documents (operating instructions, leaflet, catalog).
We certify that the measuring equipment used to check this product, and guaranteed by our Quality Assurance, is traceable to national standards.
Thank you very much for your confidence in purchasing this product.

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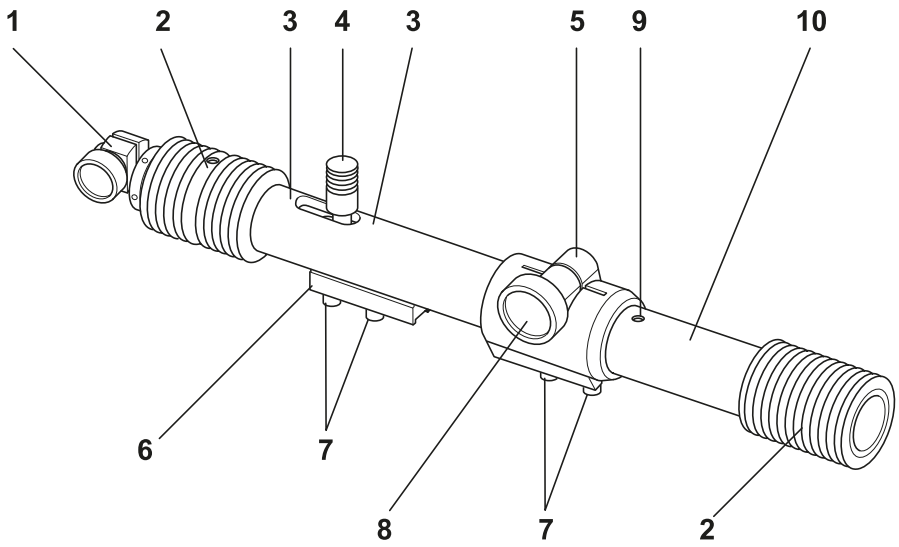
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1. Description



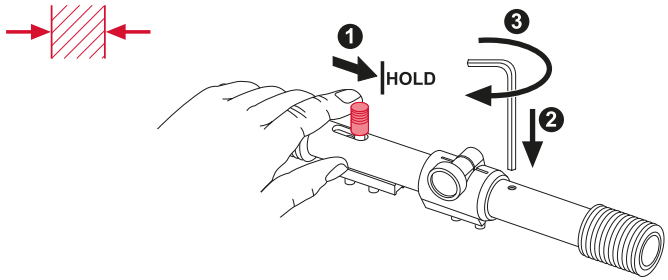
1 Holder for the indicating instrument with a clamping screw
2 Handle is heat insulated (protected against hand warmth)
3 Symbols to identify the selected measuring direction (Internal / external measurement)
4 Lifting lever
5 Stationary measuring arm holder (adjustable)
6 Moveable arm holder
7 Fixing screws for measuring arms
8 Clamping screw
9 Hex screw for adjusting the direction of the measuring force
10 Guide tube

2. Switching the direction of the measuring force

To switch the direction of the measuring force; insert a Hex wrench (Allen key) in the bore hole, which is approximately 100 mm from the lifting lever:

From internal to external measurement

1 Move the lifting lever to the right and hold
2 Insert the Hex wrench into the bore hole (hexagonal screw)
3 Tighten the Hex screw (hand tighten only)

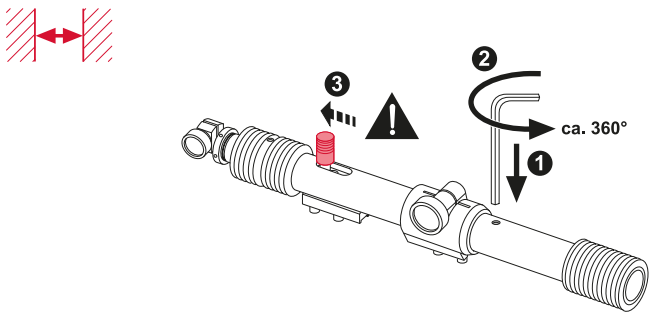


From external to internal measurement

4 Insert the Hex wrench into the bore hole when the lifting lever is released
5 Loosen the Hex screw
6 Hold the lifting lever and push back per hand.

! Due to the built-in measuring force spring the moveable measuring arm can be moved very quickly, this may cause damage to the measuring instrument.

Please note:
Loosen the Hex screw with 1 turn in order to avoid contact with the guide tube.

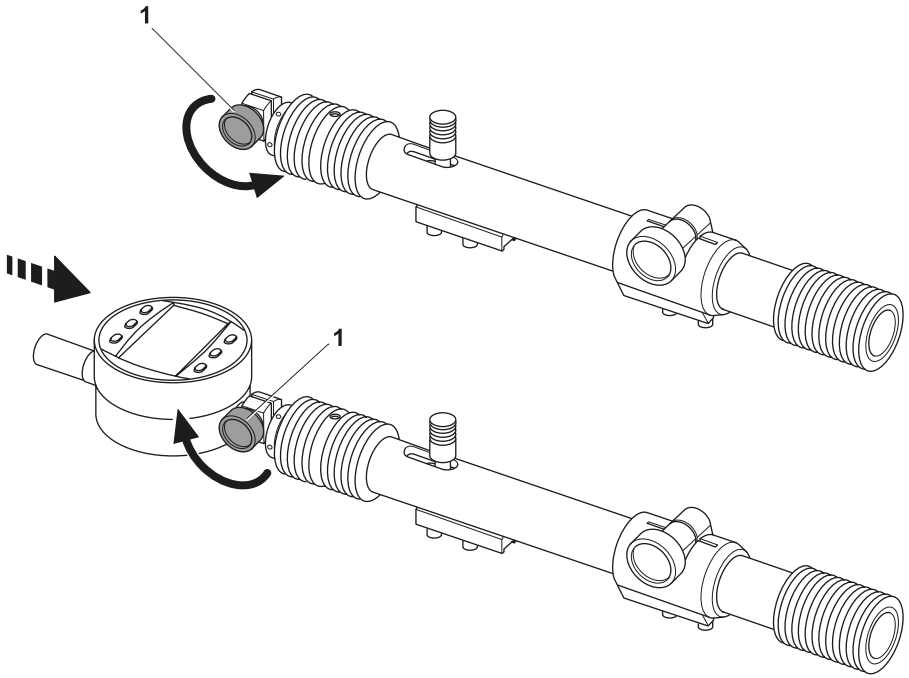


3. Inserting / exchanging the indicating instrument

- On the indicating instrument holder **1**, loosen the clamping screw
- Insert an indicating instrument in the indicating instrument holder **1**, take into account the position of the measuring direction and align the appropriate readout position

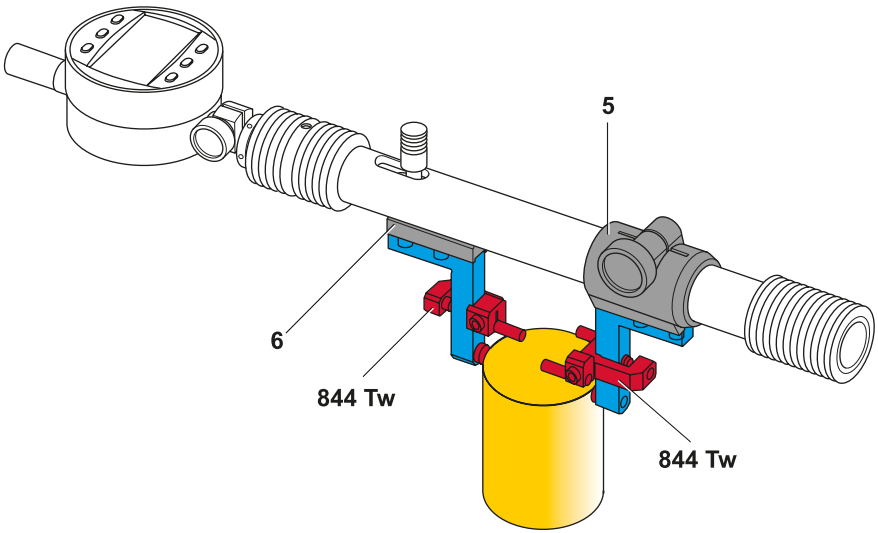
- Tighten per hand the clamping screw on the indicating instrument holder **1**

Please note:
The Protection bar 844 Tsb offers additional protection damage to the indicating instrument (see Chapter 8, Accessories).



4. Setting up the measuring arm holder

Both the measuring arm holders **(5, 6)** must be equipped with the appropriate accessories according to the measuring task. When used in conjunction with the Adaptor 844 Tad this instrument is compatible with all the available measuring anvils with a M2.5 thread. In order to always achieve reliable and accurate measuring results we recommend the use of the Depth stop 844 Tw. Due to the exact positioning of the stops on the measuring arms it is possible to ensure pendular motion along a plane parallel. Therefore accurate and continuously accurate measurements can be guaranteed.



5. Setting with measuring standards (e.g. setting ring, combination of gage blocks, master, etc.)

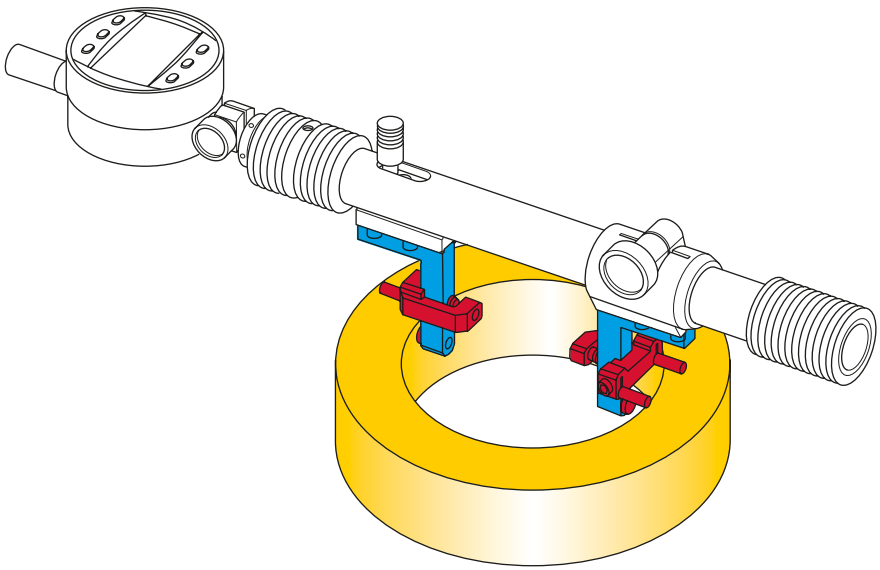
Comparative measurement
- Position the Multimar 844 T on the measuring standard
- With light pendular motion determine the position of the reversal point (Min. and/or Max value) and here set the indicating instrument to "0".

Absolute measurement
- Enter the PRESET value of the indicating instrument corresponding to the measuring standard
- Position the Multimar 844 T on the measuring standard
- With light pendular motion determine the position of the reversal point (Min. and/or Max value) and here set the indicating instrument to the default PRESET value

Please note:

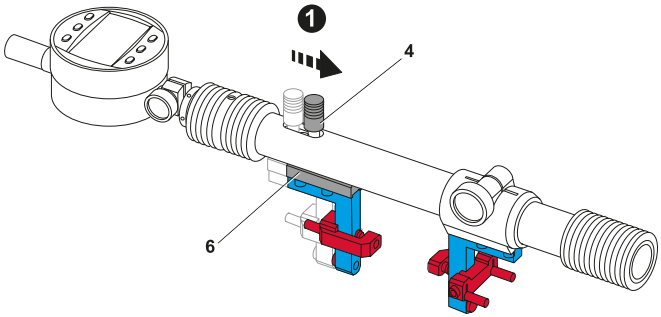
To conduct absolute measurement a digital indicator with a dynamic measuring function and a PRESET is required. The following indicating instruments are recommended:

Model Range	**Product Types**
Digital Indicators	MarCator 1087 BR, 1087 BRi

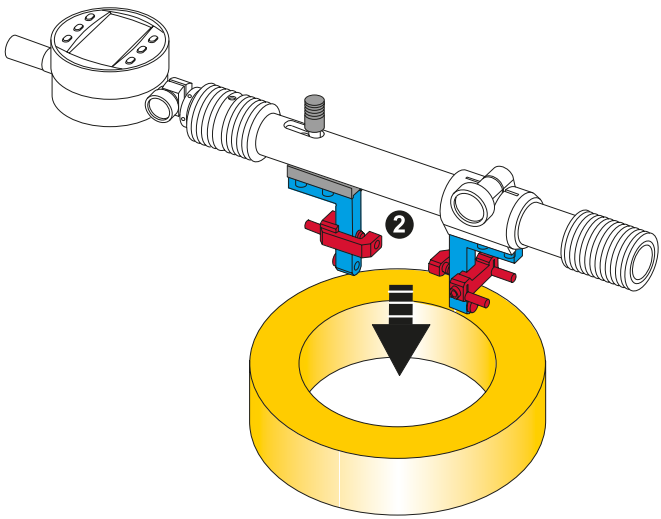


6. Measurement

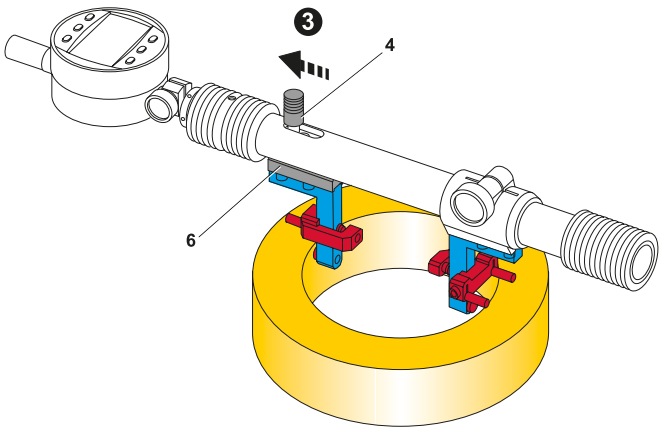
- Move the moveable measuring arm holder **6** with the lifting lever **4**



- Bring the 844 T in to the position of measurement



- Release the lifter lever **4** so that the moveable measuring arm holder **6** so that there is contact on the work piece, the constant measuring force is automatic
- Determine the reversal point (Min and/or Max value) with pendular motion
- Read off the measuring result on the indicating instrument



Application range internal mm	Application range internal extended mm	Application range external mm	Application range external extended mm	Measuring range moveable probe mm	Measuring force N	Order no.
30 - 115	110 - 195	0 - 85	75 - 165	12	5	**4503001**
110 - 265	190 - 345	80 - 235	160 - 315	12	5	**4503002**
260 - 615*	340 - 695	230 - 585*	310 - 665	12	5	**4503003**
610 - 1015*	690 - 1095	580 - 985*	660 - 1065	12	5	**4503004**
1000 - 1500*	1080 - 1580	970 - 1470*	1050 - 1550	12	10	**4503005**
1500 - 2000*	1580 - 2080	1470 - 1970*	1550 - 2050	12	10	**4503006**
2000 - 2500*	2080 - 2580	1970 - 2470*	2050 - 2550	12	10	**4503007**
2500 - 3000	2580 - 3080	2470 - 2970	2550 - 3050	12	10	**4503008**
3000 - 3500	3080 - 3580	2970 - 3470	3050 - 3550	12	10	**4503009**
3500 - 4000	3580 - 4080	3470 - 3970	3550 - 4050	12	10	**4503010**
4000 - 4500	4080 - 4580	3970 - 4470	4040 - 4550	12	10	**4503011**
All dimensions are in mm						

*To ensure the maximum application range, the insulated handle between both measuring arm holders must be removed. In addition the insulated handle and the fixed measuring arm holder must be removed from the guide tube, reassembly in the reverse order

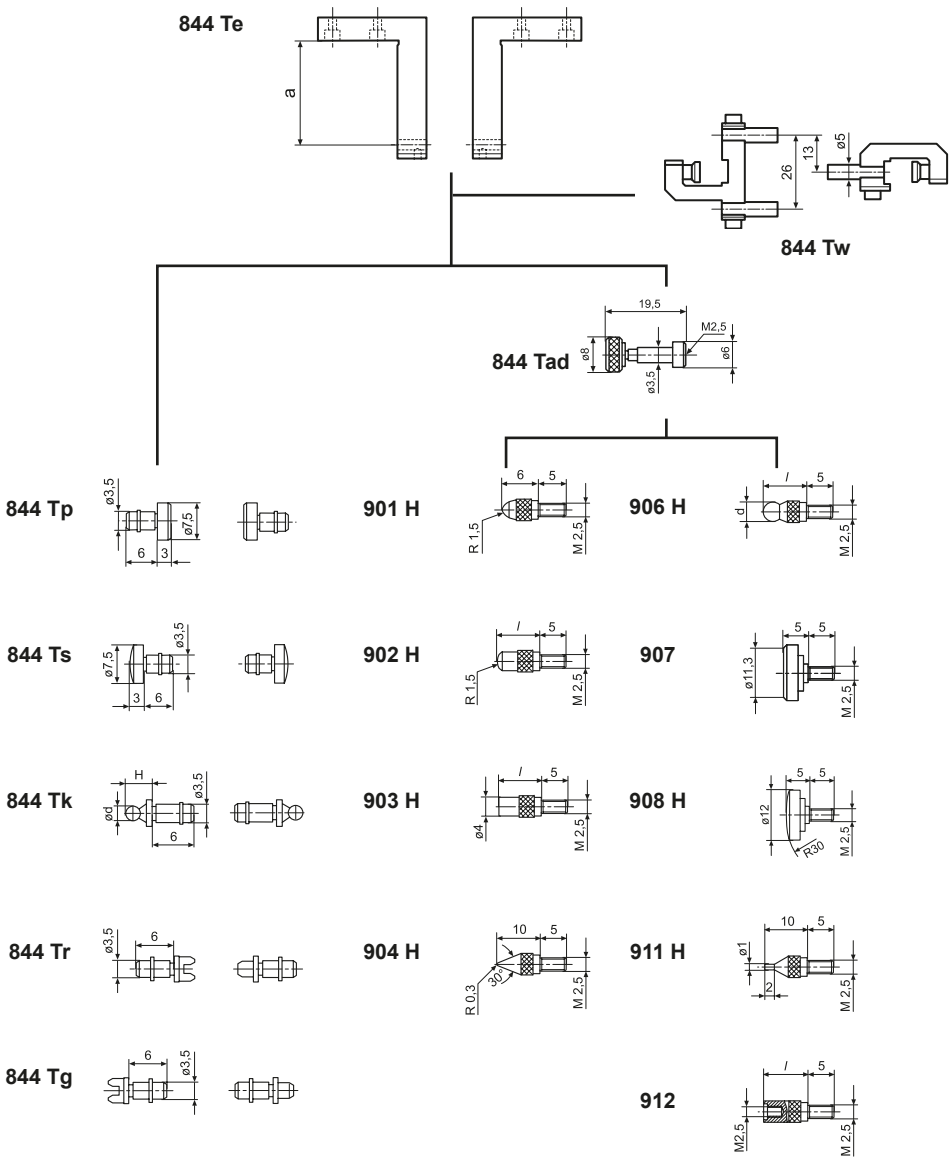
Attention!
In order to prevent damage to the guide tube, it is imperative that when fixing the the insulated handle that the screws in the groove of the guide tube are submerged.

To extend of the application range, the measuring elements are rotated through 180°.
The application ranges can deviate depending upon measuring anvils

8. Accessories

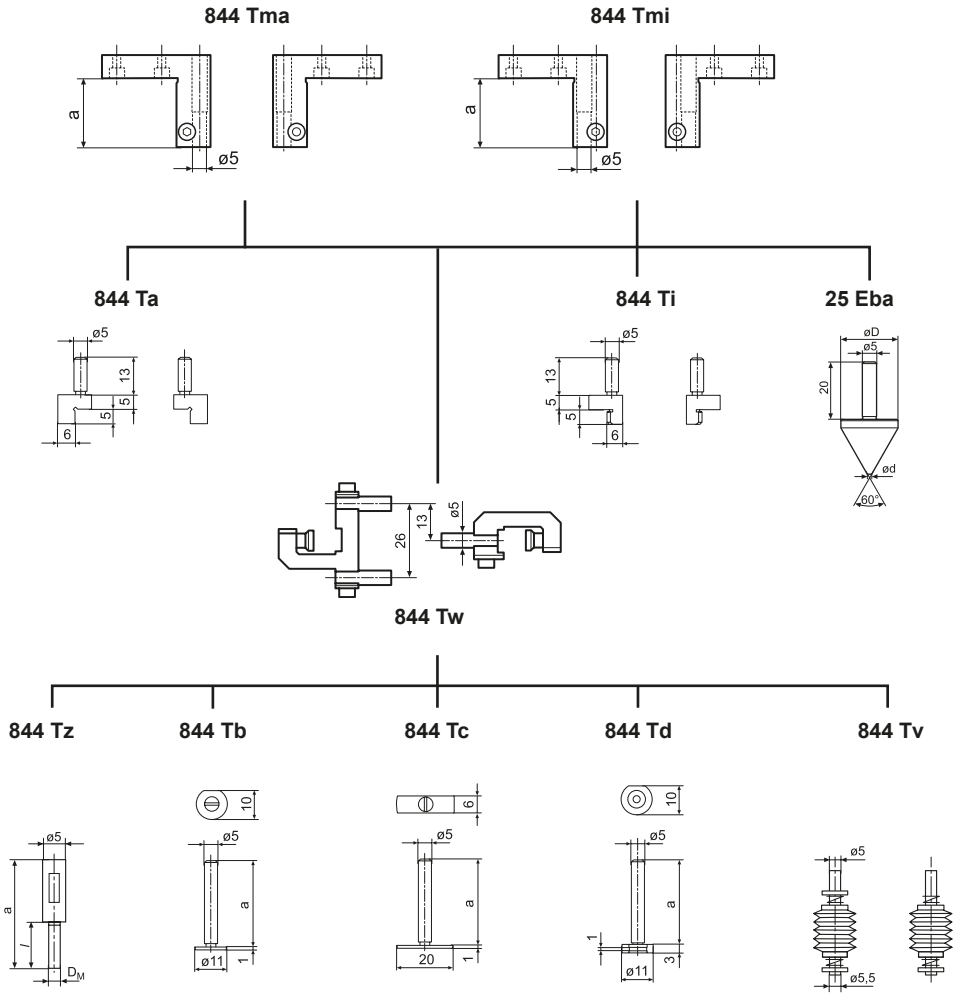
☞ By rotating the measuring arms the application range can be extended.

Measuring Arms 844 Te and Depth Stops 844 Tw
In combination with Measuring anvils **844 Tp, 844 Ts, 844 Tk, 844 Tr, 844 Tg**
In combination with Adaptor **844 Tad** and Measuring anvils **901 H - 912**



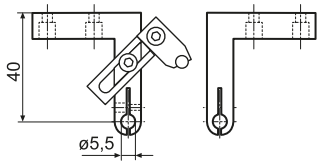
Measuring Arms 844 Tma and Depth Stops 844 Tw
In combination with Measuring anvils: **844 Ta, 844 Tb, 844 Tc, 844 Td**

Measuring Arms 844 Tmi and Depth Stops 844 Tw
In combination with Measuring anvils: **844 Ti, 844 Tb, 844 Tc, 844 Td**

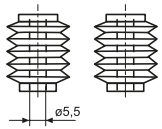


Measuring Arms 844 Ty
In combination with Measuring Anvil: **706 Vr** and Holder **844 Tf**

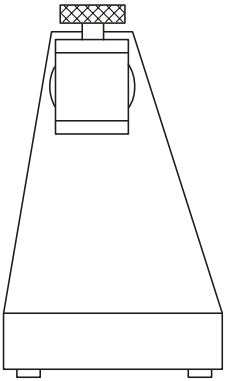
844 Ty



706 Vr

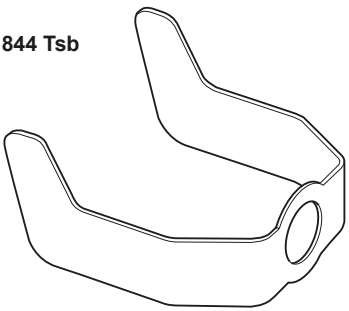


844 Tf



Protection Bar 844 Tsb
To protect the indicator against impacts or damage when laying down the measuring instrument.

844 Tsb



9. Care and Maintenance

Accumulation of dirt on the measuring faces can impair the measuring results; therefore the measuring faces must be kept clean of dirt, dust and other contamination.
After being used, the measurement instrument should be cleaned with a dry, soft cloth. Remove heavy soiling with a cloth wetted with a neutral solvent. Volatile organic solvents like thinners are not to be used, as these liquids can damage the individual components.

Should you have any questions regarding the instrument, contact us and we shall be pleased to answer them.