



MODULAR MICROMETER

MICROTECH

(Patent No. 201600872)





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1) When assembled, the Modular micrometer MICROTECH is no different from a similar one-piece micrometer and uses 50 mm digital or computerized micrometer head.

The Modular micrometer has a number of differences from conventional micrometers, as follows:

- The anvil uses a split design, unlike the set of one-piece anvils;
- The reference gauge uses a split design, unlike the set of one-piece reference gauges;
- The Modular micrometer provides an extended range, which is defined as the difference between the maximum and the minimum measuring sizes (1000 mm instead of 200 mm for conventional standard micrometers).

2) The main difference of the Modular micrometer from the similar conventional micrometer is that the Modular micrometer can be easily disassembled to modules which can be transported by any passenger car (see the photo of the disassembled snap gauge).



3) After simulation work, we have developed the optimum frame design of a large-size micrometer (3000 mm or more), which guarantees the consistency of the micrometer frame.

4) After research and testing, we have patented a modular design of the Modular micrometer which, in terms of stiffness, is on a par with the one-piece micrometer of similar size.

5) We have implemented heavy-duty flanges with an alignment bar, which enables to assemble several component modules into a single rigid structure of the micrometer frame (see the photo of the flanges).





6) For the anvil and the reference gauge of the patented MTp transformer micrometer we have implemented in the construction of high-precision threaded extension rods to produce the desired lengths.

7) The expert hand adjustment of the lengths of component modules has ensured the high accuracy of the assembled reference gauge for the Transformer micrometer, thus enabling to accurately adjust "0" and guarantee better accuracy to Transformer micrometers (see the photo of the reference gauge). For instance, the reference gauge of 4000 mm in length has an error of less than 20 microns.

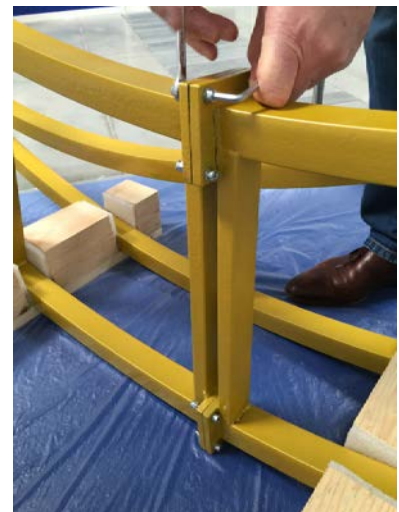
8) A Transformer micrometer is assembled from separate modules, the length of which is chosen based on ease of transport (max. 2100 mm in size):

- For 3000 mm range micrometer 3 modules are enough;
- For 10000 mm range micrometer 10 modules are recommended.

9) The components (modules) are fastened together using 2 (two) flanges, each of which has 4 (four) bolts with quick-release nuts.

10) The bolt-nut connection takes about 1 (one) minute to complete, so the total time to assemble the snap gauge of the transformer micrometer is:

- For 3000 mm range about 16-20 minutes;
- For 4000 mm range about 25-30 minutes;
- For 5000 mm range about 40-50 minutes;
- For 6000 mm range about 50-60 minutes.



11) The removable anvil is set up similarly to the anvil setting-up for micrometers of over 300 mm in size; in this case, the Transformer micrometers anvils are not replaced, but assembled with an increment of 50 mm (for a 50 micrometer head) using extension rods of 50, 100 and 200 mm.

12) The Modular micrometers reference gauge also uses a split design with a precision base bar to which extension rods of 50, 100 and 200 mm are screwed on to adjust "0" with an increment of 50 mm (for a 50 mm micrometer head).