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## **DIFFERENT WAYS TO DETERMINE THE VALUE OF THE MEASURED QUANTITIES**

*Abstract: when the desired magnitude is found directly as a result of an experiment (for example, measuring the diameter of a shaft in micrometers), such a measurement is called a direct measurement. In the case of a median measurement, the value is determined by measuring other quantities that are functionally related to it (for example, determining the angle of a cone by two diameters and the distance between them). Instrumental measurement is usually reduced to direct measurement*

*Keywords: about; bowl, direct, indirect, absolute, relative, differential, complex, contact and contactless*

### **Introduction**

Measurement methods are divided according to the application of physical principles and Means into: direct, indirect, involute, relative, defferential, complex, contact and non-contact [1,2].

If, the parameter size is determined directly based on the measurement, this is called the direct measurement method. When calculating using an instrument indicator and a specific physical link in determining magnitude, an indirect method will be used [4].

### **Materials and methods**

This includes empirical methods such as modeling, fact, experiment, description and observation, as well as theoretical methods such as logical and historical methods, abstraction, deduction, induction, synthesis and analysis. The research materials are: scientific facts, the results of previous observations,

surveys, experiments and tests; means of idealization and rationalization of the scientific approach.

When foiled from an absolute method, the size is correctly measured and determined (determining the size using stencils, micrometers, lenses). When using the relative method, however, the result obtained is determined by comparing it with a predetermined magnitude. (measurement using nutrometer)

In the differential method, product indicators are measured separately. When measured in a complex way, the error is determined by generalizing the product quality indicator or several other types of indicators.

As mentioned above, the measurement method is a set of various physical principles and methods of using measuring instruments. The principle of measurement, on the other hand, is the construction of physical phenomena on which measurements rely. Measurement styles can be distinguished by their different signs.

1. Depending on what amount of magnitude is measured in the meter device of the measuring instrument - divided into the indirect measurement (absolute measurement) method and the relative measurement (comparison by default) method.

The indirect measurement method directly determines the full amount of magnitude measured by the instrument's counting device (e.g., measurement by a shtangen pargar or micrometer), whereby the quantity indicated by the meter's counting device is equal to the magnitude value being measured, i.e.  $D = x$  (Figure 1, a).

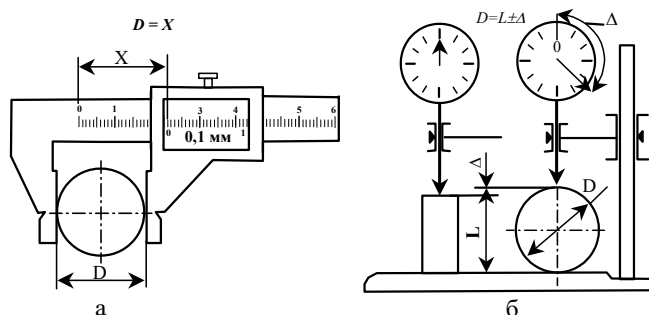


Figure 1. Measurement styles: a-absolute, B-relative

### **Results and discussion:**

The default unit comparison (relative measurement) method determines the amount of deviation of the measured size from the specified default or sample detail size using the measuring instrument's counting device; in which the instrument scale is pre-zero in the template or sample detail size (Figure 1, B). The difference is determined by the size D measured by the instrument counting device, and by the middle of a certain exact size L. In this the dimension is found in terms of the expression in the shape:

$$D = L \pm \Delta \quad (1)$$

2. According to the method of obtaining results, measurement methods are divided into direct and mediated measurement methods.

Such a measurement is called a direct measurement if the sought amount of magnitude is found directly by experiment (for example, measuring the diameter of the shaft in micrometers).

In mediated measurement, the amount of magnitude is determined by the results of measurements of other magnitudes that are in a functional connection with it (e.g., determining the cone angle by two diameters and the distance between them). Tool measurement usually gives larger errors than direct measurement. Situational measurement techniques between the object being measured and the measuring instrument are divided into contact and contactless measurement techniques-in contact measurement style, the tip (or sensitive core) of the instrument goes back to the surface of the detail being measured (e.g. measurement in micrometer, optimeter [4]).

In a non-contact measurement style, measuring instruments (e.g. projective measuring instruments) do not have a direct spread between the surface of the object and have no place in the problem of the effect of measurement strain on measurement results.

4. By the method of determining the suitability of an item, it is possible to distinguish between the methods of measuring by element and complex (in the complex).

### **Conclusion:**

An item-by-item measurement is said to measure each parameter of an item separately independently.

Complex measurement is said to be the joint examination of the quality indicators of an item, that is, the measurement of all its parameters [2].

The normal condition for the use of a measuring instrument is that the factors affecting the measurement will have a nominal value. For example: normal temperature  $t^{\circ} 20^{\circ}\text{S}$ , and work temperature  $t^{\circ} 20 \pm 1^{\circ}$ . For example: if a change of  $\Delta X = 0.01$  mm when measuring a 100 mm quantity results in a change of the instrument's arrow  $\Delta l = 10$  mm, the instrument's absolute sensitivity is

$$S = \Delta l / \Delta x = 10 / 0,01 = 1000 \text{ is [3].}$$

Length size meshes: bar and end length meshes are used in industrial production to make the length size dressing. Bar length sizes will be in the form of a sample, line, roulette, scale element available. The length of the flat-bottomed surface mesh will be made of steel and solid alloys and will be formed from a complex of plasticine and brissocks with a length of up to 100 mm in the form of a parallelepiped. With these plates, it is possible to dress blocks of a wide size range, the dimensions of which differ by 0.001 mm [1].

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