Calibration

Calibration is an essential measurement process in which the deviation of a measuring instrument or a material measure is determined and documented in comparison to a reference standard (normal). The goal is to ensure the accuracy of the measurement results. In this process, the deviation is determined and taken into account in future measurements in order to correct the measurement results.

In a traceable calibration, a special standard is used that is itself calibrated. This standard has a calibration that is connected to the definitions of the SI units through an unbroken chain of calibrations. This connection is described by the parameters deviation and calibration uncertainty. If the result of the calibration is given with these parameters, it is also traceable. Important to know: Traceability refers to the result, not to the measuring instrument itself.

According to DIN 1319-1, calibration does not involve any intervention in the measuring instrument, but only the determination of the deviation.

If the measuring instrument is adjusted on the basis of the calibration results, this is referred to as adjustment.

These terms are often confused, but are different:
Calibration is not synonymous with verification, conformity assessment, specification testing, alignment, certification or adjustment.