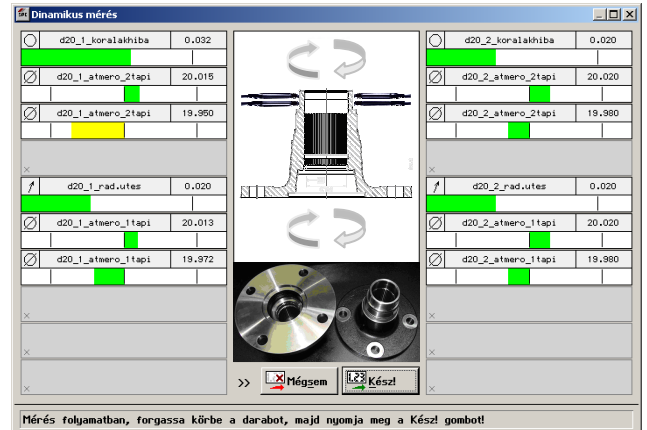


## Dynamic Measurement of Axial Parts in HNS SPC Program

The HNS SPC program directly supports with built-in functions the usage of measuring devices can be assembled from elements widely used in axial part measuring techniques. The short series manufacturing quality control can be made highly cost-effective with usage of reusable elements in product line of different producers.

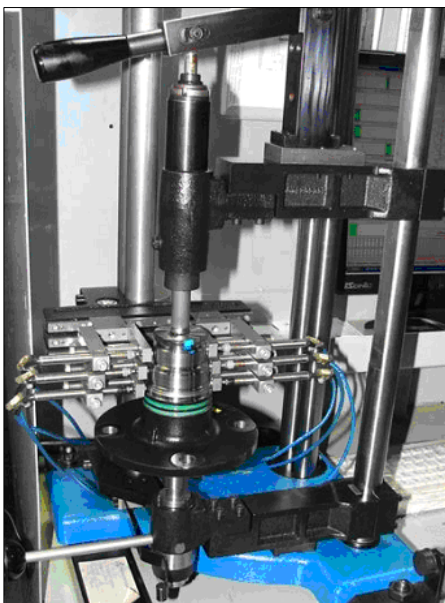
The description of measurements in measuring device of axial parts, the definitions and settings necessary to the measurement – like simple manual measurements – must be provided in the MPG (measuring task) of HNS SPC program.

After the start of the given part measurement the program continuously measures the part characteristics was given in the measuring task, and continuously displays the measured and calculated values. Each value is illustrated in bar graphs and readable also as numerical values. The program illustrates the measured values in the bar graph with easy interpretation according to the tolerance specification of the given characteristic, between the tolerance limits.

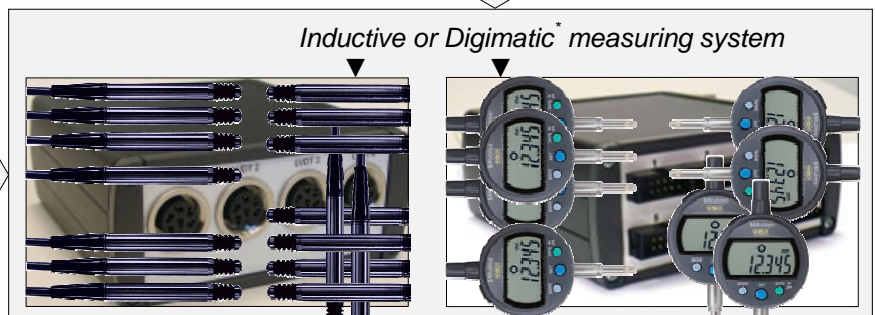


Besides the measurement conduction and the physical measurement the program has any other function necessary to make similar measurements.

- ❑ Individual calibration of probes (linearization), by which the linearity default of the inductive measuring probes can be corrected up to the full range of physical measurement.
- ❑ Measuring device calibration function necessary to the relative measuring mode (definition of the measured value based on the measurement of the difference related to the set piece with known size – etalon).
- ❑ The calibration function of the measuring device supports the handling of the ID of the etalon required for usage.
- ❑ The program records and monitors the validity of the measuring device calibration and after the validity period automatically asks for recalibration.
- ❑ Other functions necessary to set measuring probes and to detect the condition of measuring device as well as gross errors (damage of measuring system, usage of not-convenient set piece, damage of set piece).



◀ Measuring device can be assembled from standard elements



\*: Digimatic measuring tools (dial indicators or linear gauges) can also be applied beside the LVDT (inductive) measuring probes. By using Digimatic measuring probes it has to be taken into consideration that the Digimatic interface allows only limited-speed communication!

A built-in function library supports the dynamic measurement standards. The following table shows the program functions useable for descriptions of form, direction, position and run-out tolerance according to ISO 1101/1995 standard.

Parts of measuring arrangement

- Measuring device (universal measuring stand can be assembled from standard elements)
- Measuring system convenient for piece and measuring requirement
  - LVDT (inductive) measuring probes, Digimatic dial indicators and linear gauges
  - LVDT or Digimatic interfaces on request
  - Measurement start / stop switch (foot switch)
- Computer (PC, Microsoft operational system)
- HNS SPC V5.5.15 or later version

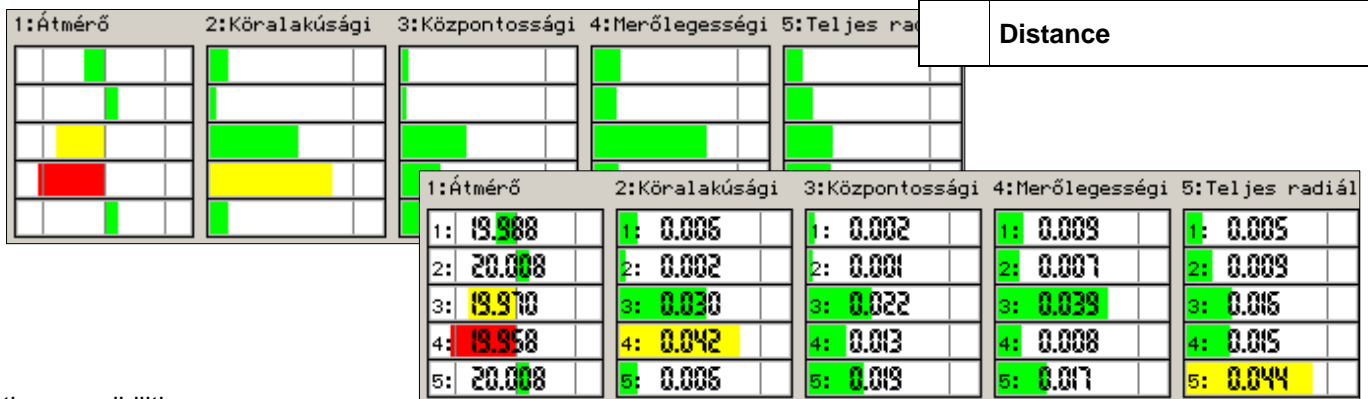
Measuring modes

- Dynamic measurement in measuring device
- Static measurement in measuring device
- Simple measurements using the gauges manually (e.g. calliper, micrometer, etc)

Data management features

- Measuring results assigned to type and production tool
- Re-measurement possibility, automatic measurement validity control
- Visualization of the measured values during measuring process
- Overview and follow-up modification possibility of measured results after measurement completion

Supported characteristics	
∅	Diameter
○	Circularity
⊘	Cylindricity
//	Parallelism of a surface with reference to a datum line
//	Parallelism of a surface with reference to a datum surface
⊥	Perpendicularity
◎	Concentricity
◎	Coaxiality
↗	Radial run-out
↗↗	Total radial run-out
↘	Axial run-out
↘↘	Total axial run-out
	Distance



Further possibilities

- The program also supports the using of double-sided measuring stands (calibration by device sides and measurement of the parts by side of the measuring stand in two steps).
- Measurements can be grouped, so beside the dynamic part measurement the common treatment of even more static measuring device and simple manual measurements are realizable by one measuring task.
- The program supports the all parts measuring mode. In case of all parts measurement all results of each part get into a log can be processed with external programs. The program supports the automatic SPC sampling based on measurements made in all parts measuring mode and the automatic records in SPC database of automatically extracted SPC samples.

*We provide on your request the planning of measuring arrangement, selection the convenient probes, interfaces and accessories, setting-up, testing and training of usage of the measuring station.  
Ask for our help also in field of capability tests related to your measuring arrangements!*