DMS 680 - Gauge Calibration

Universal length measuring system
gauge inspection for quality requirements
Universal length measuring system DMS 680

- **Wide range of applications**
  For periodic inspection of gauges, reference gauges, masters and different gauges including:
  - plug gauges
  - ring gauges
  - thread plug gauges
  - thread ring gauges
  - gauge blocks
  - snap gauges
  - external micrometers
  - internal micrometers
  - bore gauges
  - dial indicators and electronic probes

- **High precision**
  Obtained by:
  - full compliance to Abbe’s comparator principle
  - constant measurement pressure
  - adjustable work table for easy location of inversion point
  - Heidenhain special glass scale
  - PC direct reading with automatic detection of maximum and minimum value
  - gauge calibration software guiding the operator through all measuring procedures
  - automatic real time temperature compensation
  - gauge management and measurement software
Gauge management and measurement software

The instrument is connected to a PC for direct reading of current value. The software (included standard) provides a unique support for gauge management fulfilling norms requirements:
- the operator is fully guided through all measuring procedures
- automatic tolerance calculations are performed
- threads formulae are evaluated
- complete gauge records are provided including calibration date, location, cost centre, procedure and standard
- gauges are sorted according to due date, type, department, cost centre and nominal dimension
- the procedure can be recalled and displayed during the measurement process
- master gauges are managed with last calibration date and automatic notification of due date
- provides full traceability of gauge history: each measurement is recorded with the operator, the master gauge and the machine equipment used
- temperature compensation function
**Plug gauge measurement:** the movement of the work table enable high speed location of the inversion point

**Thread gauge measurement:** three wire method
**Gauge block checking:** the inspection is carried out by comparison with master gauge block.

**Internal micrometer measurement**
Ring gauge measurement

Thread ring gauge measurement: a pair of large contact arms and small contact arms, together with 12 pairs of spheres, are used to measure thread ring gauges
Small hole measurement device: the measurement is carried out with zero contact force.

Plug gauge measurement

Snap gauge measurement
External micrometer inspection

Dial indicator inspection
SPECIFICATIONS

Range of applications (diameters from - to)
- external plain: 0 - 680 mm
- internal plain: 1 - 480 mm
- external thread: 0 - 480 mm
- internal thread: 3 - 400 mm

Measuring range
- absolute: 100 mm
- differential: 680 mm

Resolution (metric/inch switchable): standard optional
- 0.1 µm
- 0.01 µm
- 0.000001"

Load capacity: 11 Kg

Power supply: 110 – 220 V

Overall dimensions: 1300 x 400 x 480 mm

Weight: 110 Kg

Measuring force: 0 – 11 N

Accuracy (U95) max value in absolute range
- 0.26 µm
- 0.000010"

special accuracy available upon request

STANDARD EQUIPMENT - included

Work table
- adjustable in all directions: vertical, horizontal, work top rotation and tilting

Reading unit
- PC, LCD 19" flat monitor and Heidenhain pc board
- on line reading software including:
  - direct reading of current measurement value
  - analogue readout for inversion point location
  - automatic detection of maximum and minimum value
  - statistical function
  - zero setting and preset

Plug gauge measurement device
- clamping device for plug gauge
- contact tips:
  - rounded
  - knife edge

Ring gauge measurement device
- small contact arms
- large contact arms
- special tailstock spindle
- rounded contact tips
- precision setting rings with 14 and 50 mm diameter

Small hole measurement device
- special table
- contact spheres with diameter of 0.8 and 3 mm

Thread plug gauge measurement device
- set of 21 calibrated wires from 0.17 to 6.35 mm
- flat contact tips with 8 and 14 mm diameter
Thread ring gauge measurement device
for inside threads with diameter from 14 to 90 mm
precision contact spheres with diameter of 0.8 - 1.35 - 1.8 - 2.3 - 3.1 mm
floating table

Snap gauge measurement device
clamping plate for snap gauge
clamping devices

External micrometer measurement device
micrometer holder
contact arm
contact tips

Internal micrometer measurement device
double side "V" bearing

Dial indicator measurement device
clamping device

Centre cradle
distance between centers 200 mm
maximum piece diameter 180 mm

Gauge management & measurement software
gauge management and measurement modules
automatic tolerance calculation
measurement procedures and thread formulae included

Temperature compensation device
direct reading and compensation of the DMS 680 temperature
with 0.01°C | 0.01°F resolution

OPTIONAL EQUIPMENT

T-sphere thread ring gauge measurement device
for inside threads with diameter from 3 mm
floating measuring device
inductive lever probe
analogue readout for inversion
set of 8 pairs of T spheres from 0.3 to 1.3 mm
(other spheres available on request)

Pitch measurement device
for internal and external threads

Big thread ring gauge measurement device
for inside threads with diameter from 90 to 400 mm

Extra weight system
to increase measuring force from 2.5 N to 11 N

Pipe thread measurement device
for inside and outside taper thread
allows to determine the height of measurement

1000 mm extension
special casted extensions to increase external measurement
capacity up to 1000 mm | 40"