

Proficiency testing: Gauges

EP_L2025-001

Provider of proficiency testing

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Coordination

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Pilot laboratory

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1 Programme

A proficiency testing is carried out for **dimensional measurands: Gauges. Two sets of feeler gauges, two plug gauges, two setting ring gauges, a reference gauge with plane-parallel measuring faces and a gap gauge** are sent as calibration objects. The calibration objects are to be calibrated in accordance with the relevant **VDI guidelines at 20 °C**:

- **VDI/VDE/DGQ 2618 Blatt 4.1:2006-02 Option 4 Test instruction for cylindrical setting gauges, plug gauges and ring gauges**
- **VDI/VDE/DGQ 2618 Blatt 4.4:2009-09 Test instruction for reference gauges with plane-parallel or spherical measuring faces and for spherical-end gauges and internal callipers**
- **VDI/VDE/DGQ 2618 Blatt 4.7:2005-06 Test instruction for gap gauges**

1.1 Confidentiality

Die Teilnehmer verpflichten sich zur Vertraulichkeit bezüglich der im Rahmen der Eignungsprüfung erlangten Informationen und Ergebnisse. Ggf. beteiligte Unterauftragnehmer sind vertraglich zur gleichen Vertraulichkeit verpflichtet.

Im Abschlussbericht werden die Ergebnisse anonymisiert dargestellt.

The participants undertake to maintain confidentiality with regard to the information and results obtained during the proficiency testing. Any subcontractors involved are contractually bound to the same confidentiality.

The results are presented in anonymised form in the final report.

1.2 Schedule / Procedure

Planned Start: June 2025

The proficiency testing takes place in a ring, whereby a calibration is carried out in the pilot laboratory before and after the calibrations of the participants and, if necessary, an interim test is scheduled after half of the participants.

Each participant has two calendar weeks to carry out the calibration and forward the calibration objects. If this is not possible, the coordinator must be informed, if possible even before the start of the proficiency testing. If necessary, the time periods will be adjusted due to delivery distances and public holidays.

The participants are responsible for an **insured and immediate forwarding** of the calibration items to the next participant or to Testo Industrial Services.

2 Realisation

2.1 Calibration objects & Measurement characteristics

Designation	KG 1 – Feeler gauge 1	KG 2 – Feeler gauge 2
Type	DIN 2275-B-TK1	DIN 2275-D-TK1
Manufacturer	GEDORE Werkzeugfabrik GmbH	Hoffmann GmbH Qualitätswerkzeuge
Measurement range	0,03 mm bis 0,1 mm	0,05 mm bis 1 mm

Designation	KG 3 – Plug gauge Cr 8 H7	KG 4 – Plug gauge Cr 25 H7
Type	484040 8	484040 25
Manufacturer	Hoffmann Group GmbH	Hoffmann Group GmbH
Measurement range	8 mm	25 mm

Designation	KG 5 – 355 E Setting ring gauge 8 mm	KG 6 – 355 E Setting ring gauge 40 mm
Type	4710026	4710060
Manufacturer	Mahr	Mahr
Serial no.	32093828	32073617
Measurement range	8 mm	40 mm

Designation	KG 1 – Reference gauge with plane-parallel measuring face	KG 2 – Gap gauge 25 h7
Type	42 1100_75	484222 25
Manufacturer	HOLEX Hoffmann GmbH	Hoffmann Group GmbH
Measurement range	75 mm	25 mm



Figure 1: Calibration objects from left to right: 1) feeler gauges, 2) plug gauges



Figure 2: Calibration objects from left to right: 1) setting ring gauges, 2) reference gauge and gap gauge

The following measurement characteristics must be determined for the calibration objects. The respective standards and, if applicable, options must be respected.

Calibration object	Measurement characteristic
KG 1 & KG 2 – Feeler gauges	- Thickness of the individual feeler gauges
KG 3 & KG 4 – Plug gauges	- Diameter of the Go site and Not go site according to option 4
KG 5 & KG 6 – Setting ring gauges	- Diameter of the Go Site according to option 4
KG 7 – Reference gauge	- Length along the centreline (mean size) - Minimum and maximum deviation from the nominal size
KG 8 – Gap gauge	- Working dimension of the Go site and Not go site

The measurement uncertainty of the measurement characteristics must be specified as an expanded measurement uncertainty in accordance with EA-4/02 M:2022.

The form factors for the setting ring gauges and plug gauges are provided.

2.2 Assigned values

The assigned values are determined using the weighted average of all participant results from the accredited calibration laboratories. If this is not possible, the assigned values are determined as a reference value measurement in the pilot laboratory.

In addition, the stability of the calibration items is evaluated over the period of the proficiency testing and, if necessary, taken into account in the evaluation as a transfer uncertainty contribution.

2.3 Evaluation

Die Ergebnisse werden anhand des E_n -Wertes zum zugewiesenen Wert bewertet. Ein zufriedenstellendes Ergebnis liegt vor, wenn gilt $|E_n| \leq 1,0$.

The results are evaluated using the E_n -value for the assigned value. A satisfactory result is achieved if $|E_n| \leq 1.0$.

3 Participation

3.1 Participants

This proficiency testing is primarily aimed at calibration laboratories that have or are seeking accreditation for the specified measurand.

3.2 Registration procedure

If interested, the laboratory will be sent an offer with the participation fees. Participation is considered binding as soon as the offer has been accepted and the order confirmation has been sent to the laboratory.

The registration deadline is enclosed with the offer.

Note: A minimum number of 8 participants is required for the organisation of this proficiency testing.

4 Further information

At the end of the proficiency testing, a draft of the final report is sent to the participants to review the results and their performance evaluation.

It is planned to present the results in anonymised form to the DKD Technical Committee.