CETA®

Dear readers,

We are pleased to present the current Newsletter no. 29 in a new layout. You can meet us soon at the Control Trade Fair in hall 4, stand 4131.
We will be glad to show you our test devices and demonstrate some practical applications.

Wishing you a pleasant reading,

Günter Groß
Managing Director

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CETA at Control 2017 in Stuttgart
09. - 12. 05. 2017 hall 4, stand 4131

Order your **free admission ticket** at
02103 / 2471-75 or **sales@cetatest.com**

CETA awarded excellent Credit Rating for the 6th time in a Row

A good customer-supplier relationship is based on factors such as durability, competitiveness, dependability, reliability and economic stability.

We are therefore very pleased about the excellent credit rating awarded to CETA for the 6th time in a row. Since 2012, CETA has maintained a solvency index of „1" (Bisnode Rating Certificate no. 318664026).
Of course, you can also enquire directly, at Creditreform for example, about the economic standing of the owner-operated company CETA.

This rating reinforces our long-standing position as a reliable and strong partner in the field of industrial leak and flow testing, to the benefit of our steadily growing customer base.

This information is very helpful for potential customers who like to choose a supplier on the basis of economic assessment criteria.

Bisnode

News from DAkkS Calibration Laboratory

The DAkkS Calibration Laboratory (D-K-19566-01-00) of the CETA Testsysteme GmbH was appraised in the course of regular inspection in February 2017 (at 18-month intervals). In the process, the calibration lab, which had been moved to a new location due to the extension of the company building, was submitted to expert appraisal. The devations raised by the auditors were manageable and non-critical. We are pleased with this very positive feedback on our standard-compliant procedures.

ilac-MRA

DAkkS
Deutsche
Akkreditierungsstelle
D-K-19566-01-00

- CETA's calibration lab is DAkkS-accredited for the measurand pressure (pressure range -1 to 60 bar).
- DAkkS calibrations are performed according to DIN EN ISO 17025 and meet the requirements of the norm ISO / TS 16949, currently in force in the automotive industry, and of the IATF 16949 future standard.
- DAkkS calibration certificates are acknowledged in many countries on the basis of international agreements (ILAC MRA).
- In 2004, CETA was the first leak tester manufacturer with DKD resp. DAkkS accredited Calibration Laboratory.

Flow Tester CETATEST 915 available with up to four Flow Calibrations

During a flow test with compressed air the airflow is measured by means of a laminar flow element. With a laminar flow the pressure decay in the laminar flow element is proportional to the volume flow. As a rule, the last is measured by a differential pressure sensor and converted to a volume flow value. The flow range of the laminar flow element depends on the applied test pressure (pressure at the laminar flow element). Flow calibration consists in calibrating the flow tester at a defined pressure. The calibra-tion is only valid for this pressure. With our CETATEST 915 flow testers it is now possible to store up to four test pressures. The different pressures for which the device should be calibrated are defined in the planning phase according to the application field. These calibration parameters (as defined in the calibration certificate) can be activated in function of the selected program. This feature substantially broadens the application range of these flow testers.

CETA Practical Tip: Advantages of Test Volume Reduction

With a pressure decay leak test, the relation between leak rate Q, effective test volume V_{eff} and pressure decay over time dp/dt is described by the following leak-rate formula:

$$\frac{dp}{dt}\left[\frac{Pa}{s}\right] = \frac{Q\,[ml/min]}{V_{eff}\,[ml]} \cdot \frac{100,000\,Pa}{60\,s/min}$$

The effective test volume V_{eff} is the sum of the volumes of the test part, the measurement line and the internal measurement circuit of the device. Some test parts can be fitted with a filler to obtain a significant reduction of the test volume (for example flanges, tubes, flap valves, bowls).

Example: The weld seams of a tube are to be tested for leaks (admissible leak rate 0.6 ml/min at 3 bar test pressure). The tube is 45 cm long with an inner diameter of 1.5 cm. The tube ends are mechanically treated. When both ends are sealed, the volume of the test part is 79.5 cm³. Using a filler (diameter 1.0 cm, length 44 cm) can reduce the test volume by 34.6 cm³.
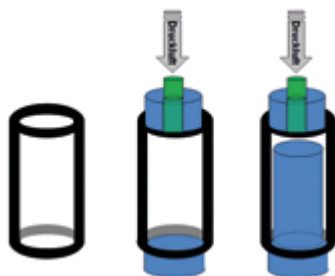
The following chart shows the effectiveness of optimization through volume reduction.

Optimization	None	Filler	Filler Meas. Line
Test Part Volume	79.5 cm³	79.5 cm³	79.5 cm³
Filler	-0 cm³	-34.6 cm³	-34.6 cm³
Red. Test Part Volume	79.5 cm³	44.9 cm³	44.9 cm³
Meas. Line (1 m 6/4)	12.6 cm³	12.6 cm³	
Meas. Line (1 m 3/2)			3.1 cm³
Device Meas. Circuit	6 cm³	6 cm³	6 cm³
Test Volume V_{eff}	98.1 cm³	63.5 cm³	54 cm³
Air Leak Rate Q	0.6 ml/min	0.6 ml/min	0.6 ml/min
Press. Decay /Time dp/dt	10.2 Pa/s	15.7 Pa/s	18.5 Pa/s

In this case, simple measures can almost double the measuring signal.
It is basically a good idea to optimize a leak-testing procedure by reduction of the effective test volume.

Figure:
Left: test part, center: adapted test part without filler, right: adapted test part with filler

Steps	Advantages
• Filler • Diameter of measurement line • Length of measurement line • Dead volume in adaption	• Lower effective test volume • Shorter total testing time • Greater pressure decay signal • Cheaper technology (possibly gauge pressure instead of differential pressure) • Advantages of Cg determination (cf. CETA Newsletter no. 13 and 16)

Table: steps and advantages of volume reduction