CETA®

Dear readers,

By the present newsletter no. 30, issued on the occasion of the Motek 2017 trade fair, we celebrate a small anniversary. Since 2005, we have regularly kept you informed about our company, products and services. We will present a cross-section of our current line of products at the Motek 2017 trade fair, to which we are glad to invite you (see below).

Wishing you a pleasant reading,
Günter Groß - Managing Director

Contents

Motek

CETA at the Motek 2017 Trade Fair, 09th - 12th October 2017 in Stuttgart

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

CETA is expecting you in **hall 3, stand 3320,** with the following exhibits:

- Test stand for testing encapsulated test parts for leaks with differential pressure leak tester CETATEST 815 and application software CETA Soft 2G
- Differential pressure leak tester CETATEST 515 for testing smallest volumes within a short total testing time and detecting smallest volume differences
- Compact and cost-effective relative pressure leak tester CETATEST XS for leak tests involving small test parts
- Presentation of the new mass flow tester CETATEST 615 with thermal mass flow sensor
- Flow tester CETATEST 915 for measuring the volume flow with laminar flow elements
- Transportable pressure progress test device DVPG | 3K for testing prefilled pneumatic circuits of utility vehicles for leaks
- Leak-testing solutions for liquid and gas-filled test parts and detection of leak rates down to 10^{-6} mbar*l/s using hydrogen (forming gas)

New Mass Flow Tester CETATEST 615

Leak tests are used to ascertain the tightness of components and systems. Various methods are available.

The new mass flow tester CETATEST 615 detects fully automatically very small leakages of less than 0,5 Nml/min in large-volume test parts. The method is based on the principle of thermal mass flow measurement. Compressed air is used as test medium.

The measured mass flow value is given in a standard unit. The user can lay down the specific reference conditions. Temperature influences are automatically compensated.

The device CETATEST 615 is used with an external reservoir volume, which is filled electronically and used as pressure reservoir. The flow of test air from the previously filled reservoir volume allows leakage detection without the disturbing effects of a regulation process.

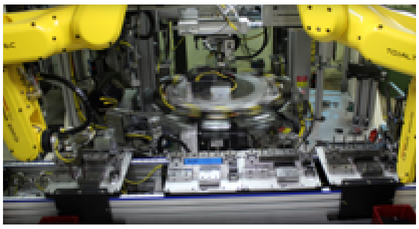
The device CETATEST 615 is particularly suited for testing large components used in the field of electromobility.

CETA with New Cooperation Partners in Mexico and Portugal

We are pleased to have gained new cooperation partners in America and Europa with the companies **MeyerV S.A.** based in Metepec, Mexico, and **TOJALTEC Lda.** based in Tondela, Portugal.

Training of MeyerV staff at CETA's facilities

MeyerV



TOJALTEC

MeyerV has been dedicated since 1996 to the sales and service of measuring devices and precision machinery.

MeyerV, S.A. de C.V., Pino Suarez # 131 Col. Casa Blanca
Metepec, Edo. de México c.p. 52175, Mexico
Carlos Rosas | Tel.: +72 2 216 21 88
ventas@meyerv.com.mx | http://meyerv.com.mx

TOJALTEC is a constructor of special machinery and has been active since 2001 on the national and international markets.

TOJALTEC – Fabrico de Máquinas, Lda., Z. I.
Vilar de Besteiros, Lote 2, 3465-190 Tondela, PORTUGAL
Cândido Roque | Tel.: +35 1 232 848 042
roque@tojaltec.com | http://www.tojaltec.com

This brings CETA's network to a total of 14 international cooperation partners dedicated to on-site servicing of our products.

CETA Practical Tip: Determination of Test Part Volume by means of a Standard Leak

A leak test procedure sometimes requires to know the exact volume of the connected test part. There is a smarter method than the classical metering. The so-called leak rate formula establishes a relationship between leak rate Q, effective test volume V_{eff} and temporal pressure decay dp/dt:

$$\frac{dp}{dt}\left[\frac{Pa}{s}\right] = \frac{Q[ml/min]}{V_{eff}[ml]} \cdot \frac{100.000\,Pa}{60\,s/min}$$

The leak rate formula is valid under stable measuring conditions characterized by a pressure decay proportional to the test time. In this case the leak rate is simulated by a standard leak connected to the measurement circuit additionally to a master part. This produces the leakage-induced pressure gradient dp/dt . Consequently, the pressure decay Δp measured during the test time t_M is:

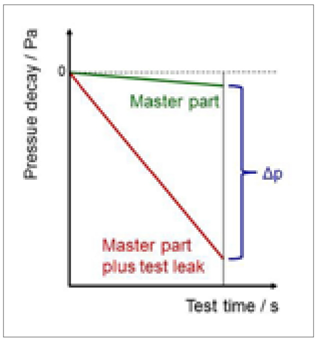
$$\Delta p[Pa] = \frac{Q[ml/min]}{V_{eff}[ml]} \cdot \frac{100.000\,Pa}{60\,s/min} \cdot t_M[s]$$

After transposing to get the effective test volume we have:

$$V_{eff}[ml] = \frac{Q[ml/min]}{\Delta p[Pa]} \cdot \frac{100.000\,Pa}{60\,s/min} \cdot t_M[s]$$

Adjusting the phase times so as to get stable measuring conditions makes it possible to determine the effective test part volume. This is the sum of the volumes of the test part, the measuring line and the internal measurement circuit of the test device.

Knowing the volume of the measuring line (by measuring the length and calculating the inner volume) and the internal volume of the measurement circuit (manufacturer specification), as well as the leak rate (see current calibration certificate of the standard leak) makes it possible to calculate the volume of the test part. Conversely, it is possible to prove that the device works correctly when knowing the test part volume.



Please note

- It is necessary to use the same test pressure than the pressure at which the flow of the standard leak was calibrated.
- If the master part displays a basic value without connected standard leak, this value must be subtracted from the measured results in order to get the pressure decay induced by the standard leak (offset correction).
- In case of an unstable measuring regime the results deviate substantially from the actual volume of the test part.