



calibration services:

METROVAC Calibration Laboratory

The METROVAC laboratory was created in 1993 under the “Development of Portuguese Industry Specific Programme” – PEDIP I. The creation of the METROVAC laboratory was proposed by the New University of Lisbon researchers as result of their large and recognised experience in the vacuum technology field.

Today METROVAC is integrated in the Technological Research Physical Centre (CEFITEC) which is one of the scientific research centers of the Portuguese Technology and Science Foundation.

The METROVAC laboratory is **accredited** by the normative referential ISO/IEC 17025 by the Portuguese accreditation body IPAC (Portuguese Accreditation Institute) since 2002, for vacuum calibrations.

Why an accredited laboratory?

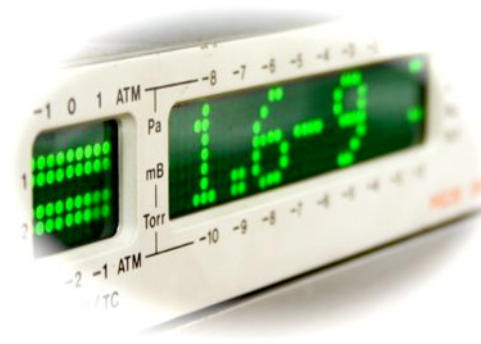
Working with an accredited laboratory is the guarantee of the technical skills of measurements and results, the control of the calibration equipment and the traceability to national or international standards.

The 5 W and the 2 H of Calibration

- Why?** Periodic calibration of all the instrumentation and standards as well as the control of all the measurement equipments ensure the uncertainty required in all measurements and guarantee its traceability. These are crucial matters in the quality control of any company generating better results and increasing the trust in the actions and decisions.
- What?** Only the measuring instruments that can affect the product quality, as well as the standards used in the calibration process.
- When?** The instruments calibration should occur before the first use; when take place overloads, falls, bad use or mistrust results. Periodically, in well define time intervals to ensure the quality of measurement. After readjust instruments.
- Where?** The calibration may occur in the company installations or in an calibration laboratory.
- Who?** The calibration should be performed by accredited laboratories to ensure traceability.
- How?** Internally – by following internal calibration procedures. Externally – the company should look for an ISO/IEC 17025 accredited laboratory to perform the calibration.
- How much?** In order to estimate the cost of investment in calibrations it is very important to take into account all the costs involved both in the internal and external processes. Simple instruments may be internally calibrated while complex should be sent to external laboratories.

Calibration Services (accredited and non accredited):

- **Low pressure calibration – from atmospheric pressure to 10^{-6} mbar**
- **Barometric pressure calibration**
- **High pressure calibration* – from atmospheric pressure to 30 bar**
- **Relative pressure calibration (positive and negative)***
- **Differential pressure calibration (positive and negative)**
- **Temperature calibration* - from -40°C to 1200°C**
- **Reference leak calibration* – from 5×10^{-8} to 5×10^{-5} mbar.L/s**



An Accredited Laboratory

When you choose an accredited laboratory you will:

- 1. Reduce time and costs**
Only an accredited laboratory ensures the correct results witch avoids replications (more time and more money!)
- 2. Minimize the risk levels to produce or provide defective products**
Relying on a technically competent laboratory will help you improve the quality of your product.
- 3. Add an additional value to your products**
A more reliable and high quality product will increase the confidence of your customers.