

## **General description**

The calibration facility FORCE No. C03-001 consists of 6 reference lines and 1 device test line.

The calibration facility is build as a closed loop, where natural gas or air is circulated with an 8 stage axial compressor.

The scope of application of the calibration facility is initial calibrations, control and re-calibration of volume gas meters, dP meters, mass meters and flow meters in the flow area of 8 – 10.000 Am<sup>3</sup>/h.

Calibrations can be performed in various pressure ranges of between atmospheric pressure and 50 bars with natural gas or atmospheric air as medium.

At each reference as well as at the device under test (DUT) temperature and pressure is measured in order to determine the real flow at the DUT. The reading from the DUT is compared to the real flow at the DUT to determine the error reading.

Normally a 6 or 7 point calibration with 3 repetitions at each point over the entire flow range of the DUT is performed. Also calibrations with special costumer requirements are performed.

When a costumer meter is build into the meter line and is ready for calibration at the desired pressure, the flow is slowly raised to the maximum flow of the DUT.

After reaching maximum flow of the DUT important is stabilization of temperature and pressure in the calibration loop before calibration is initialized. After calibration at maximum flow, the flow is regulated downwards to the next flow point. After stabilization of temperature and pressure in the calibration loop, calibration at this point will be initialized. This procedure is followed at each calibration point until full calibration is performed.

An adjustment of the DUT can be carried out after determination of the error reading at each flow point. The adjustment is meter specific (Polynomial, linear or point to point) and can be carried out by FORCE staff.

## Overview

