

Calibration checks on Micro Medical spirometers

There are different types of transducer available to measure lung volumes and flow rates. The type of transducer used is responsible for the stability of the spirometry measurement and many transducers require regular re-calibration to compensate for the effects of drift. This drift may derive from physical contamination, changes in ambient temperature, altitude, or humidity¹.

All Micro Medical spirometers use a digital volume transducer that exhibits exceptional stability² and accuracy³ and remain unaffected by these conditions.

As with **all spirometers** it is recommended that the calibration is checked in keeping with the current ATS/ERS Guidelines on spirometry.

The current ATS/ERS Standardisation of Spirometry guidelines 2005⁴, clearly define the difference between calibration and calibration checks. Micro Medical spirometers cannot have their factory calibration altered and so the user can perform a calibration check but not alter the factory based settings.

If the operator wishes to perform a “simple check” then the initial flow range is the mid flow, allowing a quick check to be performed. Once complete select ‘Done’ and a ‘pass’ or ‘fail’ status will be reported. The calibration screen can then be exited.

The current ATS/ERS guidelines recommend:

“At least a daily calibration check using a 3 litre syringe, discharged at least three times to give a range of flows varying between 0.5 and 12 L.s-1 (with 3 L injection times of ~ 6s and <0.5 s)”

To aid users in complying with these guidelines, Micro Medical have designed their spirometers to allow users to empty the syringe between three shaded bands; this ensures compliance with the 3 specified flow rates.

References:

1. Prevention of thermal and condensation errors in pneumotachographic Readings of the maximal forced expiratory manoeuvre.
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3. Long Term performance of a handheld spirometer
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4. Standardisation of spirometry
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