Pulmonary Diagnostics – Calibration Jaeger Masterscreen PFT System

Site Applicability

St. Paul's Hospital

Mount Saint Joseph Hospital

Practice Level

Basic Skill: Respiratory Therapist

Requirements

Volume, gas analyzer, and pressure calibrations must be performed on a daily basis. Repeat calibrations may be necessary when large fluctuations in barometric pressure or ambient temperature (greater than 2 degrees Celsius) occur, if equipment parts are replaced/changed, or when troubleshooting equipment.

Equipment and Supplies

SentrySuite Software
Jaeger Masterscreen PFT System
3L Calibrated Syringe with MicroGard Filter

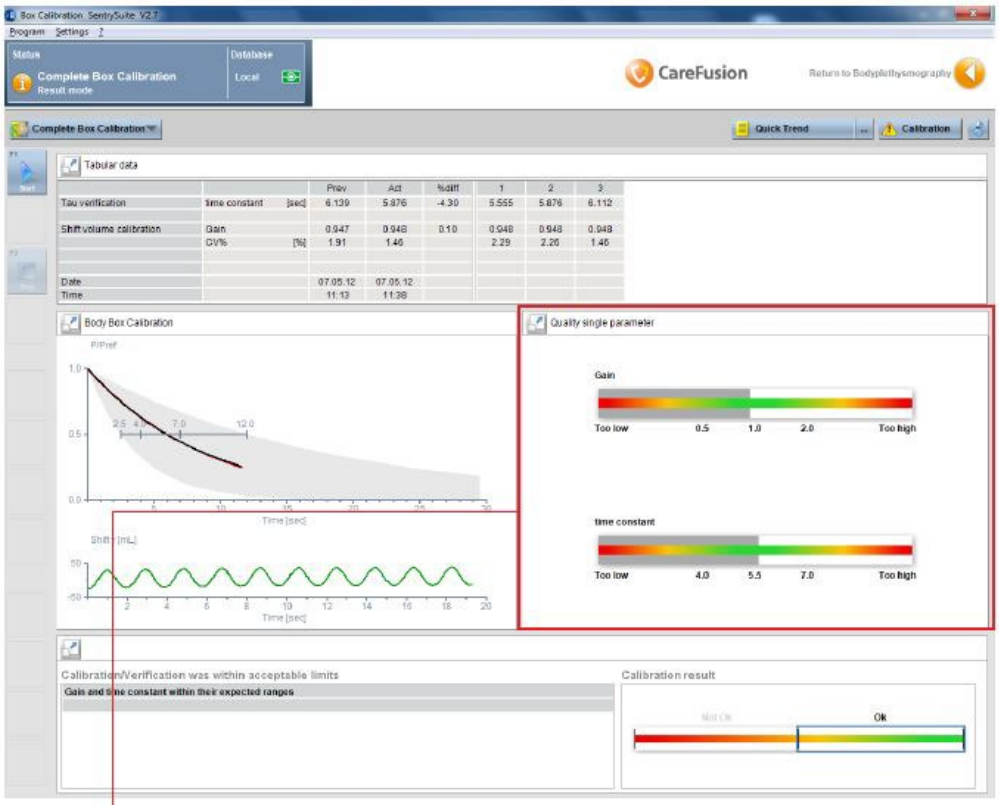
Procedure

Steps

1. Close body box door.
2. From the System Desktop, click on the Calibration Tools button.
3. Choose the desired calibration to perform: Box, Gas Analyzer, or Volume calibration.

Box Calibration

4. After choosing “Box Calibration” ensure that body box door is completely closed.
5. Update **Ambient Conditions**: Click on the thermometer icon on the upper right-hand side of the screen. A pop-up window appears. Update the current barometric pressure, temperature and humidity. Click “Save”.
6. Click F1 to start calibration. Once it has verified that the body box door is closed, the computer will enter a 2 minute stabilization countdown.
7. “Tau Calibration” (time constant) and “Shift Volume Calibration” (gain) begin automatically.
8. During calibration, avoid fluctuations in temperature and pressure (opening and closing doors, vibrations, etc.) as this may lead to false measurements.
9. Once complete, confirm that the measured time constant and gain are within acceptable limits. Repeat calibration as necessary.

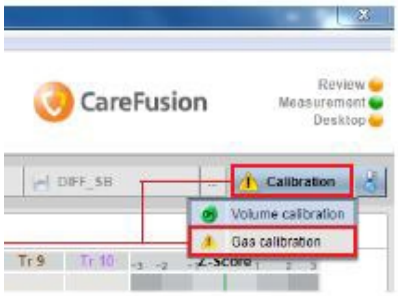


The right part of the screen shows the quality of the single parameters by means of two bar indicators. “Gain” and “time constant” should be in the green range.

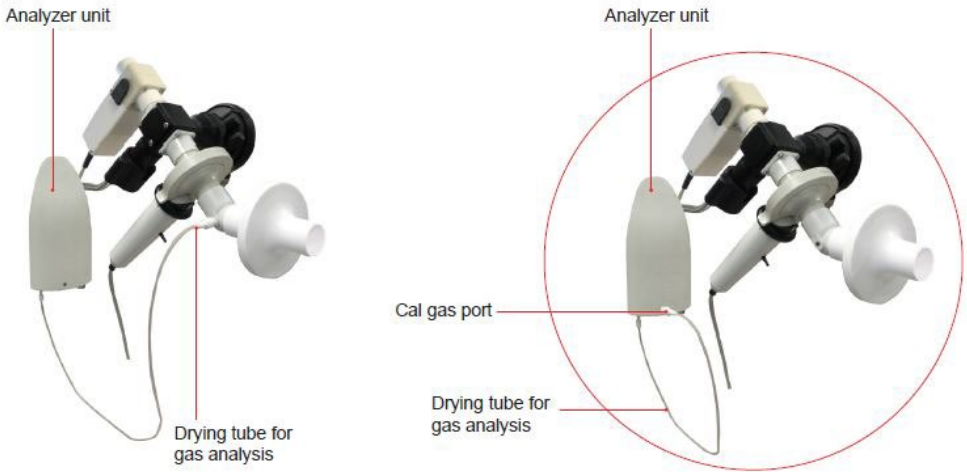
Furthermore, the blue rectangle in the window “**Calibration result**” at the bottom of the screen should be positioned on “**Ok**”.

Gas Analyzer Calibration

10. Click on the small “Calibration” button on the upper right-hand corner of the screen and choose “Gas Calibration”, or return to System Desktop, click the Calibration Tools button, and choose “Gas Analyzer Calibration”.



11. Update **Ambient Conditions**: Click on the thermometer icon on the upper right-hand side of the screen. A pop-up window appears. Update the current barometric pressure, temperature and humidity. Click “Save”.
12. Open body box door to access DLCO equipment.
13. Verify that calibration gas tank valve is open.
14. Connect the drying tube to the calibration gas port of the DLCO analyzer.

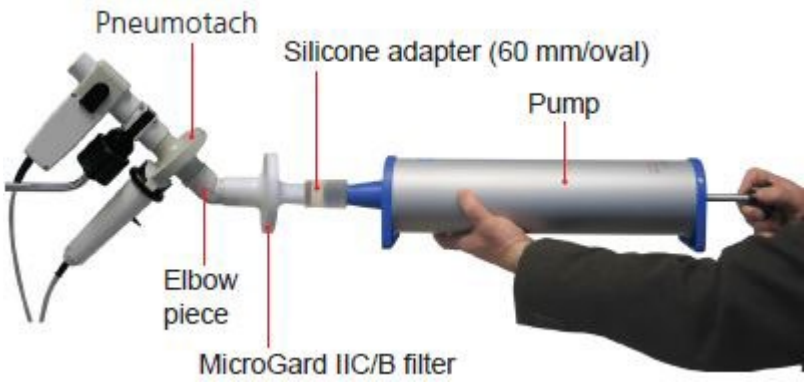


For the calibration the drying tube has to be removed from the elbow piece in front of the mouthpiece and connected to the cal gas port on the analyzer unit.

15. Press F1 to calibrate all gases.
16. Once calibration is completed, confirm that measurements are within acceptable limits. Repeat calibration as necessary.
17. Reattach drying tube to the elbow in front of the pneumotach as prompted.

Volume Calibration

18. Click on the small "Calibration" button on the upper right-hand corner of the screen and choose "Volume Calibration" or, return to System Desktop, click the "Calibration Tools" button, and choose "Volume Calibration".



19. Update **Ambient Conditions**: Click on the thermometer icon on the upper right-hand side of the screen. A pop-up window appears. Update the current barometric pressure, temperature and humidity. Click "Save".
20. Click F1 to start measurement.
21. Attach calibration syringe with filter to pneumotach.
22. To complete a three flow calibration, pump the calibration syringe, back and forth, three times at each flowrate: low, medium and high, as indicated by the white lines on the volume calibration graph. The initial strokes are discarded.
23. Once completed, confirm that measurements are within acceptable limits. Repeat calibration as necessary.

References

CareFusion Instructions for Use, MasterScreen Body, Body/Diff, Diff, PFT, IOS Manual for SentrySuite Software 2.19, Version 01.00.

Eur Respir J 2005; 26: 511–522: ATS/ERS Task Force: *Standardisation of Lung Function Testing*; V. Brusasco, R. Crapo and G. Viegi.

College of Physicians and Surgeons of British Columbia, Diagnostic Accreditation Program*, Accreditation Standards, Pulmonary Function* (May 3, 2017).

Initial Effective Date:	30-APR-2008
Posted Date:	26-SEP-2023
Last Revised:	26-SEP-2023
Last Reviewed:	26-SEP-2023
Approved By: *(committee or position)*	PHC
	Pulmonary Diagnostics Coordinator, Respiratory Services Professional Practice Leader, Respiratory Services Medical Director, Pulmonary Function Lab
Owners: *(optional)*	PHC
	Respiratory Therapy