

University of Texas Medical Branch Pulmonary Function Clinic Policy 03-04 Pneumotach Calibration	Effective Date: Revised Date: Review Date:	Oct 05 Sep 21 Aug 23
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## Patient Testing – PFT Equipment Quality Control & Flow Sensor Calibration

**Audience** All personnel in the Pulmonary Function Clinic.

**Purpose** To describe the procedure for performing quality control (QC) and calibration on the Profiler and Elite in the Pulmonary Function Clinic. The Pulmonary Clinic will use the manufacturer’s (MGC Diagnostics) recommended Quality Control and Calibration Specifications using the Breeze program.

### Quality Control

Quality control is important to ensure laboratory is consistently meeting appropriate standards. QC testing involves periodic testing of the system to verify that it’s in the manufacturer’s specifications in order to ensure consistent and reliable results which will help to reduce or eliminate errors. ATS/ERS recommend biologic control along with syringe QC. Syringe QC in the Clinic will be performed *at least once a month* for Spirometry and Nitrogen Washout (travel cart only). Diffusion syringe QC will be performed *weekly*. Biologic studies (Bio QC) should be performed as part of complete quality control program and will be done *weekly* for Diffusion and *monthly* for Spirometry, and as needed to ensure accurate results. See policy03-04A for guided QC procedures and specifications per manufacturer.

### Flow Sensor (Pneumotach) Calibration

Pneumotach calibration is a two-step procedure and requires a zero reference to ensure that the system is reading zero flow when no flow is being introduced. The Pneumotach must be zeroed before each test. It is also zeroed as part of the automatic gas analyzer calibration. Volume calibration of flow sensor is required *once per day every morning* before patients arrive. See Policy 03-04A for guided Flow Sensor (Pneumotach) Calibration procedures and specifications per manufacturer.

**Records** Documentation of QC and calibrations will be kept digitally in Breeze database calibration log. Hardcopy reports do not need to be kept unless necessary. Breeze maintains electronic records of QC and calibrations. Breeze is the database that holds all records of quality control, calibration and patient testing by manufacturer MGC Diagnostics.

To maintain consistency and organization of Breeze files, each workstation will have a dedicated file for performing QC, so it can be easily identifiable and accessed. A new QC file will be created in Breeze *each year*. Each staff performing Biologics on a regular basis will also need to have a new file *each year*.

Staff will use the following format to create new QC files:  
ID=serial number of workstation—year (example: 232001137--2021)

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Last Name=QCyear (example=QC2021)  
First Name=Location name (example: VLTC PFT Lab)

Staff should use the following format to create a yearly biologic file:  
ID=employee ID—year (example: 235509--2021)  
Last Name=employee last name  
First Name=employee first name or initial

All Breeze workstations in main Pulmonary laboratories will be maintained weekly and/or monthly. Off-site locations may follow different schedule, based on patient use.

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## References

See Policy 03-04A for references of manufacture’s Quality Control and Calibration specifications.

**This form documents the approval and history of the policies and procedures for the Pulmonary Function Laboratory. The Medical Director signs all policies verifying initial approval. Annually thereafter, the Director and/or designee may approve reviews and revisions.**

<b>Date</b>	<b>Approved by:</b>	<b>Signature</b>
11/07	V. Cardenas, MD Medical Director Pulmonary Laboratory	
6/09	V. Cardenas, MD No changes to the policy	
7/10	V. Cardenas, MD No changes to the policy	
2/12	A. Duarte, MD Medical Director Pulmonary Function Laboratory No changes to the policy	
5/14	A. Duarte, MD Medical Director Pulmonary Function Laboratory No changes to the policy	
8/16	A. Duarte, MD Medical Director Pulmonary Function Laboratory No changes to the policy	
11/17	A. Duarte, MD Medical Director Pulmonary Function Laboratory No changes to the policy	
8/19	A. Duarte, MD Medical Director Pulmonary Function Laboratory No changes to the policy	
9/21	A. Duarte, MD	

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**Medical Director Pulmonary Function Laboratory  
Changes to the policy**

**8/23**

**A. Duarte, MD  
Medical Director Pulmonary Function Laboratory  
No changes to the policy**