

Human Immunology Center Core Laboratory  
David H. Smith Center for Vaccine Biology and Immunology  
Aab Institute of Biomedical Sciences

## STANDARD OPERATING PROCEDURE: Calibration, Maintenance, and Cleaning of the Laboratory Pipettes.

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### 1. Purpose/Scope:

The purpose of this procedure is to outline the calibration, maintenance, and cleaning of pipettes located in the Human Immunology Core Laboratory (HIC).

### 2. General Policy:

The HIC will adhere to the specific guidelines recommended by the manufacture for the use and maintenance of the pipettes. The specific policy will be outline below for calibration, maintenance and cleaning of the pipettes. This will also include the proper documentation indicating that the maintenance recommended has been completed and also tracking of any issues or problems with the pipette in the Pipette Calibration Log Book.

### 3. Specific Policy

#### 3.1. Calibration, Maintenance, and Cleaning

3.1.1. Calibration, maintenance and cleaning are performed every 6 months or when a new pipette is received in the laboratory.

3.1.1.1. Calibration, maintenance and cleaning are performed by LPS. Typically, LPS has 2 days during the month when calibration is performed. A notification is sent out via email from purchasing with the dates on a per month basis. It is the responsibility of the HIC personnel to track calibration expiration dates and ensure pipettes are calibrated in a timely manner.

3.1.1.1.1. Decontaminate all pipettes due for calibration by spraying with Vesphene and let sit for 10 minutes.

3.1.1.1.2. Place pipettes in large zip lock bag for transport.

3.1.1.1.3. Take pipettes to appropriate location for calibration, maintenance and cleaning by LPS. LPS will have the proper documentation to fill out. Be sure to include an account number for fees accrued.

3.1.1.1.4. Charges accrue if repair is needed. The current fee schedule is located in the Calibration Log Book.

3.1.1.1.5. When pipettes are returned from LPS, fill out a pipette calibration form for each pipette. The forms are filed in the pipette binder.

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Attach any pipette specific documentation from LPS to this form. File the paper in the binder by specific pipette.

3.1.1.2. Calibration performed by HIC personnel

3.1.1.2.1. Perform 10 pipettings with the maximum and minimum volumes as indicated on the pipette.

3.1.1.2.1.1. Place a clean weigh boat on the analytical balance.

3.1.1.2.1.2. Set the pipette to the minimum setting.

3.1.1.2.1.3. Using distilled water, pre-wet the appropriate pipette tip for the pipettor 3 times with distilled. A series of ten pipettings is then performed at the indicated volume and record each volume on the Pipette Calibration Form. After each volume is recorded, tar the balance to 0.

3.1.1.2.1.4. Adjust the pipette to the maximum and repeat step 3.1.1.2.1.3.

3.1.1.2.2. Calculate the Inaccuracy and the Imprecision (Standard Deviation) for both volumes tested. Record on Pipette Calibration Form.

Inaccuracy = (Average Value of the 10 pipettings)-(Expected Volume)

Impression or Standard Deviation can be calculated using a calculator or Microsoft Excel.

3.1.1.2.3. Compare the results to the table on page 7 of the FinnpiPETTE Focus Single Channel Variable and Fixed Volume Instruction Manual.

3.1.1.2.4. If the values are within the accepted levels in the table, the pipette is acceptable for use. If it is outside the ranges, the pipette is sent to LPS for repair.

Reference:

FinnpiPETTE Focus Single Channel Variable and Fixed Volume Instruction Manual

Attachments:

Pipette Calibration Form

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**Revision History**

Version	Change	Impact	Justification	Change Date:
HIC-4-0012	New		Control document management system	02/21/07