**Procedure Name: IVOS Size and Intensity Gate Adjustments for Proficiency Specimens**

**Procedure Number: SH.CP.AU.hem.0130**

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| **Original Author:** | | **Effective (adopted) Date:** | **Supercedes Procedure #** | |
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**Title: IVOS Static Size and Static Intensity Gate Adjustments for Proficiency Specimens**

1. **Purpose**

The purpose of this procedure is to provide instructions for adjusting the static size and static intensity gates on the Hamilton Thorne IVOS, for the accurate recognition of sperm or particles found in proficiency samples.

# Scope

This procedure will be used by technical staff to perform software adjustments on the Hamilton Thorne IVOS semen analysis instrument in the Hematology & Chemistry Laboratory of the University of Rochester Medical Center.

# Responsibilities

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| Group/Person | Responsibility |
| Medical Director | * Ensures that the procedure is followed. * Review and approval of this document. |
| Supervisor | * Ensures that the procedure is followed. * Review and approval of this document. |
| End User | * Follows the Procedure |

1. **Acronyms/Definitions**

Not Applicable

1. **Specimens**

Proficiency samples for automated semen analysis

1. **Quality Control**

Quality Control should be performed prior to running proficiency samples according to the Automated Determination of Sperm Count and Motility procedure SH.CP.AU.hem.0021.

1. **Special Safety Precautions**

All proficiency specimens should be considered potentially infectious and must be handled with precautions as described in the Lab Safety Procedure SH.CP.AU.gen.0005.

1. **Materials**
2. **Equipment**

**1.** Hamilton Thorne IVOS

1. **Supplies**

**1.** MicroCell counting chamber

1. **Procedure**

**AN IMPORTANT NOTE PRIOR TO PROCEEDING WITH THIS PROCEDURE:** Logging onto the IVOS instrument as an Administrator will provide the user with the ability to adjust system settings that could potentially alter the way that the instrument counts particles and determines motility. For the prevention of unintended settings changes, it is important to follow the exact steps found in this procedure, refraining from entering any instrument menus not listed and to log off the Admin user code when finished.

1. **Instrument and Sample Preparation**
   1. Log on to IVOS software using the user name: ADMIN and password: System123.
   2. Prepare and load the specimen according to the proficiency instructions and the procedure for the Automated Determination of Sperm Count and Motility, SH.CP.AU.hem.0021.
   3. Once the specimen is loaded, select the Setup button at the top of the view station.
   4. In the Setup menu, select the Optics Setup button at the left hand side of the view station.
   5. Cycle through the Setup options using the “Next” button near the top of the view station until Setup #7: CAP SAMPLES is selected.
   6. Select the Acquire button at the top of the view station.
   7. Select a field that contains either sperm cells or the particle being counted and select the Start Scan button near the left hand side of the view station.
2. **Static Size and Static Intensity Gate Adjustment**
3. After selecting Start Scan, the Display category and Results sub category will be selected. Take note of the particle count and then select the Play Back button on the left hand side of the view screen. On this screen, take note of the objects that were counted by the instrument by the notation of a dot that will be covering the object. Also take notice of the objects that were not counted. Select the QC Plots button on the left hand side of the view station.
4. The QC Plots screen will display a plot of Static Intensity vs. Static Size. In this plot, there is a box with blue border lines. The horizontal lines on this box are the Static Intensity gates and the vertical lines are the Static Size gates. Any object that fits within the size and intensity parameters dictated by the box will be counted and notated by a red or green dot. Any object that falls outside of this blue box will not be counted and will be indicated by a white dot. The goal of this procedure is to adjust this blue box to include any objects that should have been counted and to remove any objects that shouldn’t have been counted.
5. The blue box can be adjusted by clicking and dragging on any of its borders. Depending on what objects were counted by the instrument, it may be necessary to adjust the size of the box to include white dots that were not counted or to remove red dots that were counted. Adjust the box to include or remove dots based on what was seen in the Play Back category. Once the blue box has been adjusted, select the Play Back button on the left hand side of the view station. The results will be recalculated according to the new gate settings and a different set of objects will have been counted. Repeat this exercise, adjusting the gates as necessary until all objects that should be counted have a dot on them and all objects that shouldn’t be counted do not.
6. Select the Acquire button on the top of the view station and scan a different field than what was previously scanned. Make sure that the new gate settings hold true to this field as well. Repeat this step two more times to make sure the gates are set appropriately. It may be necessary to readjust the gates depending on what is counted in subsequent fields.
7. Once the gates are set appropriately, select the Acquire button near the top of the view station and proceed to analyze the specimen according to the procedure for the Automated Determination of Sperm Count and Motility, SH.CP.AU.hem.0021.
8. **Printing Results and Logging Off**
9. After the specimen has been counted, select the Print/File button near the top of the view station. In this screen there will be a box titled Select Reports. Unselect the option for COMPLETE WHO 5 and select CAP REPORT TES before printing the results. After printing, unselect CAP REPORT TES and select COMPLETE WHO 5.
10. **After proficiency samples have been run and printed, log off the ADMIN user name.**
11. **Limitations**

Not Applicable

1. **Calculations**

Not Applicable

1. **Interpretation**

Not Applicable

1. **Result Reporting**

Report results for proficiency samples according to the Proficiency Testing Procedure SH.CP.AU.gen.0010.

1. **Training**

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| **Role** | **Training Needed** |
| Management | Read Procedure |
| End User | Read Procedure  Perform Skills Assessment |

1. **References**

1. Automated Determination of Sperm Count and Motility procedure SH.CP.AU.hem.0021

2. Lab Safety Procedure SH.CP.AU.gen.0005

3. Proficiency Testing Procedure SH.CP.AU.gen.0010

4. Hamilton Thorne IVOS SOFTWARE GUIDE Version 13.0