**Purpose**:

This process provides instructions for how to QC and maintain manual testing stations in TSL.

**Process:**

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| Required Supplies  |
| Cleaning/Disinfection | Labelling | Handling | Routine Reagents |
| * Disinfectant
* Disinfectant wipes
* Lint-free cloths
* Tissues
* Paper towels
* Gauze squares
 | * Indelible markers
* Indelible ink pens
 | * Parafilm
* 12 × 75 glass tubes
* Plastic caps to fit 12 × 75 tubes
* Blood bank transfer pipettes
* Segment opening devices
* Sample centrifuge with balance tubes
* Calibrated serologic centrifuge
* Calibrated cell washer
* Squeeze bottle of 0.9% saline
* Agglutination Viewer
 | Routine reagent rack with* Anti-A
* Anti-B
* A1 cells
* B cells
* Anti-D
* Screening cells 1, 2, 3
* LISS
* Anti-IgG
* Antihuman globulin (AHG) control cells
 |
| Safety | General |
| * Eye splash protection
* Scissors
* Gloves
* Biohazard containers
* Lab coat
 | * 37 C dry bath
* Computer terminal(s)
* Laser printer
* Label printer
* Transfusion Tag Printer
* Agglutination viewer and extra bulbs
* Testing rack
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| Additional Reagent Racks |
| DAT Rack | * Polyspecific AHG
* Anti-C3b,-C3d
* Complement Control Cells
 |
| ABO Resolution  | * Anti-A,B
* Seraclone Control ABO+Rh
* A2 cells
 |
| Additional Antisera | * Contains antigen specific antisera. Example: anti-E
 |

Procedure A: Start of Shift

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|  | **Action** | **Related Documents**  |
| **General Quality Statements** |
| **1** | * Manual QC and maintenance will be performed as early in the shift as possible given the workload status.
* Problems found in reagent or equipment QC and maintenance will be addressed immediately.
* Testing will be repeated if the problem may have compromised test results.
* All actions are recorded on the bench QC forms.
* Various codes can be used to direct attention to additional comments and/or actions. They include:
	+ SC: See Comments
	+ EB: Explained on Back
	+ LE: Late Entry
 | Quality Policy: Equipment Management |
| **Equipment Functionality QC** |
| **At the start of EACH shift for all benches:** Verify the functioning and calibration date of all equipment |
| **2** | **Heat block**: Acceptable Temperatures 36 to 38oC* Record digital and thermometer temperatures.
* *Readings must agree within ± 1o*
* Record acceptable fluid level in test tube (✓).
* Verify SI Maintenance and Thermometer Calibration are in date.
* Adjust temperature and fluid level if found out of acceptable limits.
 | * Thermo Scientific Heat Blocks Operation & Maintenance Procedure
* Heat block Daily QC Form
* Helmer Ultra CW Operation, Cleaning & Maintenance Procedure
* Cell Washer Daily QC Form
* Helmer Ultra CW Maintenance Schedule
* Helmer Serofuge Operation & Maintenance Procedure
* Bench Daily Reagent & Equipment QC Form
 |
| **Cell Washer:** *There are two different manufacturer cell washers in TSL. Dispensed volumes may differ.** Perform Daily checks
	+ Record saline dispensed volume at least once a day and after replacement of saline cube.
	+ Record saline cube expiration
	+ Record **Y** for daily QC performed
* Record lot number and expiration date of saline cube on the first of each month and as replaced.
* Perform additional duties which are rotated by shift. Record **Y** and Tech ID on date performed:
	+ Confirm schedule and perform as needed.
		- Weekly checks
		- Monthly checks
		- Annual checks
* Empty waste, if applicable
* Verify SI Maintenance is in date.
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|  | **Action** | **Related Documents**  |
| **Equipment Functionality QC** |
| **At the start of EACH shift for all benches:** Verify the functioning and calibration date of all equipment |
| **3** | **Serofuge and Specimen Centrifuge:*** Clean regularly as needed.
* EBA20: Verify RPM and timer settings for TANGO, if applicable.
* Verify SI Maintenance and Thermometer Calibration are in date.
 |  |
| **4** | **Following completion of bench QC and Maintenance verifications:*** Record confirmation of equipment acceptability by placing ✓ in the Equipment column.
* Remove from service any equipment found to be out of validation or performing incorrectly.
* ***Example:*** *Cell washer volume is required to be 54 mL. Attempts to attain 54 have failed. Remove from service and notify Scientific Instruments. Complete QIM. Record all actions.*
 | * Removing Equipment from Service
* Bench Daily Reagent and Equipment QC form
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|  | **Action** | **Related Documents**  |
| **Reagent QC** |
| **At the start of EACH shift for all benches:** Verify QC and acceptability of reagents |
| **5** | * Confirm routine reagent rack QC has been performed by comparing lot numbers to lots listed on the Daily Reagent QC form
	+ Perform QC if indicated
* Perform Reagent QC review as needed
* Confirm saline squeeze bottle is in date
* Discard any outdated reagents.
* Replace any empty reagents.
* Follow up on low reagent supplies
 | * Manual Reagent QC Procedure
* Daily Manual Testing Reagent QC Record
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|  | **Action** | **Related Documents**  |
| **Reagent QC** |
| **At the start of EACH shift for all benches:** Verify QC and acceptability of reagents |
| **6** | * Document completion of reagent QC for rack assigned to bench by entering rack designation in the Reagent Rack ID column.
* Record Tech ID.
 | * Bench Daily Reagent & Equipment QC Form
 |
| **7** | Additional Antisera and Reagent Red Cells:* Confirm and/or perform QC when used.
* Obtain 2nd review of QC prior to issuing test results.
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| **Additional Duties** |
| **8** | Perform additional maintenance duties as specified on the MLS Shift Responsibilities Checklist.* Duties are rotated monthly by shift
* Tech is responsible for duties if not performed by assigned shift.
 | MLS Shift Responsibilities Checklist |

Procedure B: End of Shift

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|  | **Action** |
| **1** | Follow these instructions at the **end of every shift**. |
| **2** | * Dampen all non-porous surfaces with disinfectant solution or wipes.
* Allow to air dry.
 |
| **3** | Ensure there are sufficient amounts of reagents in the rack for the next user. |
| **4** | Clean, label with lot and expiration, and refill saline squeeze bottle, if needed. |
| **5**  | Fill any depleted cleaning, labeling, or handling supplies (from the Required Supplies list). |
| **6** | Store patient samples and paperwork. |
| **7** | Empty and replace full biohazard containers. |
| **8** | Leave the workstation in a clean and usable condition. |

**Reference**

Applicable Equipment User Manuals

Standards for Blood Banks and Transfusion Services, Current Edition. American Association of Blood Banks. AABB Press, Bethesda, MD.