HEALTH HOLDING

HAFER ALBATIN HEALTH CLUSTER
MATERNITY AND CHILDREN HOSPITAL

Department:	Laboratory and Blood Bank		
Document:	Internal Policy and Procedure		
Title:	Maintenance of Platelet Incubators		
Applies To:	All Blood Bank Staff		
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1. PURPOSE:

1.1 To check the alarm system of platelet incubators and to maintain the incubators in good working condition.

2. DEFINITONS:

N/A

3. POLICY:

3.1 Incubators for platelet storage shall be able to maintain a temperature throughout the cabinets within the range recommended by the supplier.
3.2 The temperature of incubators for platelet storage shall have a temperature range between 20 °C and 24 °C.
3.3 Incubators for platelet storage shall have a system to monitor the temperature of the incubator continuously.
3.4 Platelet incubators should include agitator which provides uniform air circulation and smooth agitation for platelets.
3.5 It offers an alarm monitoring system to detect and notify of agitation has stopped
3.6 Audible alarms on temperature monitored equipment shall be located in an area that is staffed at all times.
3.7 Records of maintenance malfunction and repair must be kept during the working lifetime of the equipment.

4. PROCEDURE:

4.1 **Every six months,** the following maintenance should be done on the platelet incubator. Follow the manufacturer's directions for maintenance .
- 4.1.1 Check the alarm for sound :
  - 4.1.1.1 Press the "alarm test" button (or pull the plug, if there is no special alarm test button)
  - 4.1.1.2 If the alarm rings (and the light flashes, if applicable), record S (satisfactory) on Biannual maintenance form. Some models have an alarm indicator light as well as an audible alarm.
  - 4.1.1.3 If the alarm is malfunctioning, record N (not satisfactory) on Biannual maintenance form.
  - 4.1.1.4 Record the temperature manually every 4 hours until the alarm is repaired .
  - 4.1.1.5 Disconnect the platelet agitator from the power supply and then remove the back-up power supply (if there is a separate one) to the audible alarm. When the back-up power supply is disconnected, there should be a visual or audible sign.
  - 4.1.1.6 Document the testing of the back-up power supply on Biannual maintenance form .
  - 4.1.1.7 If the back-up power supply is not functional; the temperature of the platelet incubator should be recorded every 4 hours until the back-up power can be restored .

4.1.2 Check the temperature sensors for low and high temperatures:

4.1.2.1 Remove platelets from the incubator.

4.1.2.2 Warm the platelet incubator with a heating device (e.g., blow dryer) until the alarm sounds and check the temperature indicated on the temperature recorder.

4.1.2.3 Record the temperature on the digital or continuous temperature recorder on Biannual maintenance form (for semi-annual check) or on receipt and after repair form (for upon receipt or after repair).

4.1.2.4 The alarm should have sounded at 24 °C. Adjust the set point to 24 °C and repeat testing if the alarm did not sound at 24 °C .

4.1.2.5 Stop heating the incubator; open the door(s) and note the temperature on the digital or continuous temperature recorder at which the alarm stops ringing (it should stop ringing at 24 °C).

4.1.2.6 Place several freezer packs to cool the temperature of the incubator. Close the door and wait until the alarm sounds .

4.1.2.7 When the alarm sounds, check the temperature on the digital or continuous temperature recorder .

4.1.2.8 Record the temperature on biannual maintenance form .

4.1.2.9 The alarm should have sounded at 20 °C.

4.1.2.10 Adjust the set point to 20 °C and repeat testing if the alarm did not sound at 20 °C .

4.1.2.11 Remove the freezer packs: close the door(s) and note the temperature on the digital or continuous temperature recorder at which the alarm stops ringing (it should stop ringing at 20 °C).

4.1.2.12 Record the date the alarm probe was checked on biannual maintenance form .

4.1.3 Check the motion alarm indicator:

4.1.3.1 If the incubator has one. The motion sensor should indicate that the agitator is not moving. If the sensor indicates no motion, record S (satisfactory) on Biannual maintenance form. If there is no indication ,record N (not satisfactory) and initiate a maintenance request (or contact the manufacturer if warranty applies).

4.1.3.2 Clean the interior and exterior of the cabinet with a disinfectant solution (e.g. Presept, glutaraldhyde, etc.). Record Y (yes) on Biannual maintenance form when completed .

4.1.3.3 Clean the dust from mechanical parts (a vacuum works best, if available).

4.1.3.4 Check that there is proper air circulation (fan is working. no obstacles preventing efficient air flow). Record Y (yes) on form when completed .

4.1.3.5 Check that the door seals tightly (adjust gasket as necessary). Record Y (yes) on Biannual maintenance form when completed .

4.1.3.6 Record all corrective actions on Biannual maintenance form. Keep a copy of documentation of the work performed, including work done by the maintenance department or servicing.

4.1.3.7 Report any abnormalities found with the platelet incubator to the supervisor.

4.2 **Upon receipt or after repair,** before storing platelets inside the incubator. perform the following steps:

4.2.1 Install the incubator as per manufacturer's instructions. Ensure the operator manual is available .

4.2.2 Check the temperature of the platelet incubator .

4.2.3 Place one thermometer on the bottom shelf and another one on the top shelf .

4.2.4 Read and record the temperature for 5 days on both thermometers and on the recorder. Record the temperatures on Receipt and repair form .

4.2.5 Test the alarm for sound for 5 days.

4.2.6 Record S (satisfactory) or N (not satisfactory) on Receipt and repair form .

4.2.7 Test the alarm sensor for low and high temperatures.

4.2.8 Record the high and low temperatures on Receipt and repair form.

4.3 **Immediate Corrective Action for Alarm Sounding on Platelet Incubator :**

4.3.1 Silence the alarm.

4.3.2 Read and record the temperature of the continuous recording device and internal thermometer (as applicable).

4.3.3 Determine the cause for the alarm: door ajar or incubator malfunction.
4.3.4 If a door was ajar, proceed to step 6.3.6.
4.3.5 If the door was closed completely, a malfunction is the cause for the alarm. Proceed to 6.4.
4.3.6 If the temperature of the platelet incubator is between 20 °C and 24 °C and a door was ajar:
4.3.6.1 Close the door and minimize entry.
4.3.6.2 Set a timer for 15 minutes.
4.3.6.3 Check the temperature after 15 minutes.
4.3.6.4 If the temperature remains between 20 °C and 24 °C, record the date and immediate action taken on form.

4.4 **Malfunction instructions:**
4.4.1 Remove all platelets. If they are not required for patient use, consider sending them to another facility if a back-up incubator is not available.
4.4.2 If an interim platelet incubator is not available, remove the agitator from the incubator and store at room temperature.
4.4.3 Read and record the temperature every 4 hours using a calibrated thermometer placed on the agitator.
4.4.4 Call maintenance immediately after ascertaining the safety of the platelets.
4.4.5 If there is an off-site alarm that did not alert someone, determine why there was no response.
4.4.6 Record the malfunction and corrective action on form.

4.5 **Reporting:**
4.5.1 The blood bank supervisor must review the results of maintenance and any action taken. Corrective action should be documented, if taken.

5. MATERIALS AND EQUIPMENT:

5.1 **Forms and Records:**
5.1.1 Malfunction and corrective action form
5.1.2 Receipt and after repair form

6. RESPONSIBILITIES:

6.1 Biomedical engineering department is responsible for periodic maintenance.

7. APPENDICES:

7.1 N/A

8. REFERENCES:

8.1 AABB Technical manual, 18th edition, 2014.
8.2 AABB Standards for Blood Banks and Transfusion Services, 30th edition, 2016.

9. APPROVALS:

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