

**LOCAL JOINT HEALTH AND SAFETY COMMITTEE
DEPARTMENT OF BIOMEDICAL SCIENCES
STANDARD OPERATING PROCEDURE**

1. A. **SECTIONING OF TISSUES WITH MICROTOME USING DISPOSABLE MICROTOME BLADES.**
- B. **USING THE AUTOMATED ROTARY FEATURES OF MICROTOME.**
Effective Date: February 2004
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Purpose: To facilitate the safe use of microtomes and disposable blades in the process of obtaining paraffin sections and safe usage of the automated rotary feature of the microtome.
Approvals Required: Faculty Supervisor, Local JH&SC, EHS
2. **DEFINITIONS:**
 - A. Paraffin sections for microscopic examination are obtained by cutting the paraffin block with use of a microtome fitted with a disposable steel microtome blade. The blades have an extremely sharp edge and care must be used when handling them.
 - B. The automated rotary feature of the microtome prevents injuries associated with repetitive motion. Once the user is comfortable with the use of the microtome, the automated motor function will be very useful. However, the automated feature can introduce risk to the user if users do not adhere to the operation protocols.
3. **REQUIREMENTS:**

All persons using the microtome with disposable blades must be aware of the risks associated with microtome use and exercise extreme caution when using the microtome and handling microtome blades.
4. **TASK:**
 - A. Put **brake on**. Release the blade holder lever on the blade holder assembly. Carefully, obtain a disposable blade from dispenser and slide into the blade holder. Push lever to tightening position, being careful not to force the lever. Place paraffin block in jaws of the block holder assembly. Release brake. Use arrow buttons to advance or retract the specimen block. Trim block using the trim mode of the trim/section button. Put **brake on**. Release block from block assembly. Place block on ice for approximately 10 minutes. With the **brake on**, place the block in block holder assembly. Release brake. Press the trim/section button to section mode. Align block face to cutting edge by using advance and retract buttons. Rotate the wheel away from you to begin taking sections. Float sections on heated water bath containing 1ml of dry gelatin. Pick up slide off the top of the waterbath, let dry. When fully air dried, transfer to a 70°C oven for 20 minutes. Proceed with staining. **Always remember to engage brake when putting on or taking off specimen block and changing disposable blades.**
 - B. Move handwheel to motor position. With **brake on**, place specimen block in block holder assembly. Align the specimen block face to cutting edge by using advance and

retreat buttons. Release brake. Press footswitch enable button. Select mode: 1-cuts one section and stops. Run-cuts as long as footswitch or run button is held down. Stop-runs continuous until stop button is pushed or footswitch fully depressed. Speed knob adjusts speed. If emergency stop is used, turn knob in the direction of the arrow and then press NEXT to reset unit. Trim specimen block in trim mode at about 10-15 . **Engage brake**, remove block. Cool on ice for approximately 10 minutes. Place specimen block in block assembly holder, align the block face to cutting edge. Depress foot pedal to begin sectioning. Float sections on heated waterbath with 1 ml gelatin, pick up slide off the top of the waterbath, let dry. When fully air dried, transfer to a 70° C oven for 20 minutes. Proceed with staining. **Always remember to engage brake when putting on or taking off specimen block and changing disposable blades.**

5. CONTINGENCY PLAN AND REPORTING:

In case of injury, cutting oneself with the knife, first aid must be provided. Minor cuts, which do not require medical aid should be treated at once, to prevent the injury from becoming worse. In case of a more serious injury (a deeper cut or greater extent of bleeding). Emergency should be called to get the injured person to immediate medical care. The injury must be reported by filling out and sending the University of Guelph Injury/Incident Report to EHS within 24 hours. The SOP for clean up if human blood should be followed.

6. REFERENCES:

- Finesse quick reference
- Manual of Histologic Staining Methods of the Armed Forces Institute of Pathology, 3rd ed.
- previous SOP "Sectioning of tissues with microtome, using a microtome knife. Examination and sharpening of the microtome knife.

7. DISTRIBUTION OF COPIES:

Technicians, graduate students, project students, other University of Guelph employees working in the lab.

Faculty Supervisor

Environmental Health and Safety

Local JH&SC, Department of Biomedical Sciences

Written by: Helen Coates

Authorization: _____

Date: