

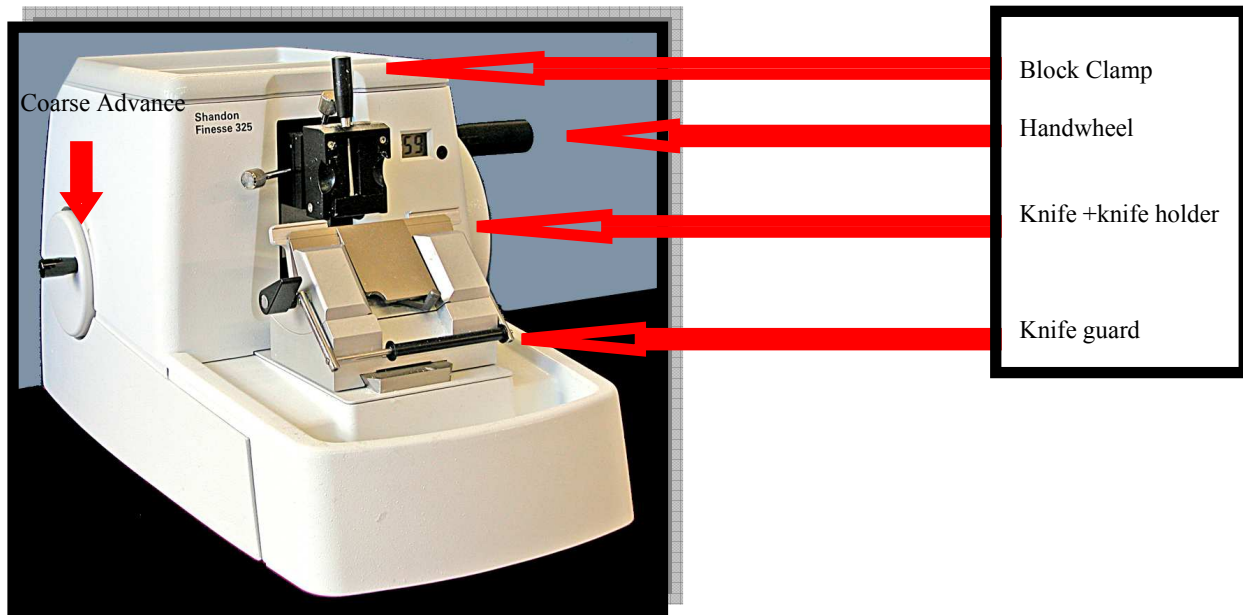
## STANDARD OPERATING PROCEDURE

### 1. SOP for: Use of Shandon Finesse 325 Microtome

Wallace Wurth Building level 1, RM M111,  
Histology & Microscopy Unit, (02) 9385-2529

### 2. Description

A manual rotary microtome intended for use by appropriately trained laboratory personnel for sectioning of paraffin embedded tissue specimens.



### 3. Authorisation

The use of the microtome is only to be undertaken by staff and postgraduate students who have completed the appropriate training and signed the training register in the Histology & Microscopy Unit

◆ **Authorisation provided by:**

Head of Histology & Microscopy Unit  
Dr Maria Sarris

◆ **Equipment custodian/Area Supervisor:**

Dr Maria Sarris

◆ **Training required for task:**

Staff and postgraduate students must complete safety and practical training provided by Maria Sarris or Gavin McKenzie in Histology & Microscopy Unit.

◆ **Supervision required for task:**

Supervision is required at all times, no student or member of staff should operate the equipment without a trained HMU member present.

◆ **Responsibility for Review of this SOP:**

SoMS Occupational Health and Safety Committee and Head of Histology & Microscopy Unit

<p><b>4. Resources, e.g., is there anything you need in advance before commencing</b></p> <p>◆ <b>Equipment</b> Shandon Finesse 325 microtome Feather Microtome blades Knife box Knife dispenser A fine brush Water bath Waste tray Kimwipes Hot plate for sections to adhere to slides Glass slides</p> <p>◆ <b>Substances</b> None</p> <p>◆ <b>Other people</b> Staff from the HMU present</p> <p>◆ <b>PPE (see section 6)</b> Safety glasses for eye protection Closed shoes A laboratory coat to protect clothing</p>	
<p><b>5. Instructions. Include the Hazards, Risks and Controls at the appropriate stage where they could occur.</b> <span style="float: right;"><i>Ref Risk</i></span></p> <p><i>Assessment if applicable</i></p>	
<b>Environment</b>	<p>◆ The Microtome is to be used only in the Histology Laboratory RM M111.</p>
<b>Preparation</b>	<p>◆ This piece of equipment utilises sharp knives and has moving parts</p> <p>◆ Always be aware of where your hands are in regard to the knife and knife holder</p> <p>◆ Always put the knife guard over the knife when trimming</p> <p>◆ When the microtome is not in use, place the knife guard over the knife and engage the brake, the lever is located above the handwheel is engaged by being moved clockwise (away from you).</p> <p>◆ Place cassettes in the cassette clamp using only the thumb and forefinger and keeping the other finger away from the knife</p> <p>◆ A hot plate, set at 56°C, is also used in this procedure</p>
<b>Step by Step Instructions</b>	<p><b>Trimming:</b> <b>MAKE SURE THAT THE HANDWHEEL BRAKE IS APPLIED BEFORE MOUNTING A SPECIMEN</b></p> <p>◆ Push the quick release lever of the Cassette Clamp backward, insert the cassette, and release the lever.</p> <p>◆ Check that the cassette is clamped firmly.</p> <p>◆ Use the vertical and horizontal tilt controls as appropriate to orientate the specimen correctly with respect to the knife edge.</p> <p>◆ Lock the orientation head in position when the optimum orientation is obtained.</p> <p>◆ Send the block holder to its rear limit by turning the Coarse Advance Knob (left side of microtome) anticlockwise. <i>The alarm sounds when the limit is reached.</i></p> <p>◆ Select a cutting thickness using the dial on the right side – 4 µm is a general thickness</p> <p>◆ Place a knife into the knife holder, release the clamping lever, located to the right of the clamp plate</p> <p>◆ Slide a knife from the knife box and slide the knife beneath the clamp ensuring it is sitting straight – engage the clamping lever and place the knife guard over the knife</p> <p>◆ Bring the block towards the knife by rotating the coarse feed wheel clockwise</p> <p>◆ Test if the block is close enough, release the handwheel brake and slowly rotate the handwheel clockwise – the knife should just trim the block</p> <p>◆ Slowly turn the handwheel clockwise. Each time the handle of the handwheel moves from the 12 o'clock position to the 1 o'clock position, turn the Coarse Advance Knob approximately one eighth of a turn to advance the specimen toward the knife by approx. 25</p>

	<p>microns.</p> <ul style="list-style-type: none"> <li>◆ Continue turning the handwheel and advancing the specimen until clean sections of the specimen are taken.</li> <li>◆ Engage the handwheel brake when trimming is completed and the specimen presents a clean smooth surface to the knife.</li> </ul> <p><b>Sectioning:</b></p> <ul style="list-style-type: none"> <li>◆ Place the block in the clamp and bring the block close to the knife using the coarse feed handle.</li> <li>◆ Set the thickness control to the desired setting.</li> <li>◆ Use a new knife or new part of the existing knife by releasing the clamping lever and sliding the knife along – lock the lever when this is done</li> <li>◆ If the block is in the correct position, release the brake and begin cutting by rotating the handwheel clockwise, collecting sections in a ribbon</li> <li>◆ Once you have the required sections, turn the handwheel to the top of it's rotation and engage the brake</li> <li>◆ Remove sections from the clamp plate using a fine brush underneath the sections to separate them from the blade, and float sections on the water bath</li> <li>◆ Place knife guard over knife</li> </ul>	
<b>Clean up and Waste Disposal</b>	<ul style="list-style-type: none"> <li>◆ When the work is completed, remove the knife by lowering the lever on the clamping plate thus releasing the knife.</li> <li>◆ Slide knife out and dispose of in the knife dispenser</li> <li>◆ Sweep paraffin trimmings into the waste tray at the front of the microtome</li> <li>◆ Release the clamp lever (base right hand side towards the front) and remove the knife holder</li> <li>◆ Sweep paraffin trimmings into the waste tray</li> <li>◆ Disassemble the knife holder and clean by sweeping away paraffin trimmings and removing any ground in paraffin with Kimwipes</li> <li>◆ Place the knife holder back on the base and set at an angle of 4</li> <li>◆ Place the knife holder base back on the Microtome</li> <li>◆ Ensure the brake is activated</li> </ul>	
<b><i>Optional</i></b> This procedure is rated <b>HIGH</b> (AS 4360) when carried out to the above instructions and incorporating the appropriate control measures. <b><i>Refer to Risk Assessment</i></b>		
<b>6. Key Hazards</b> Refer to Risk Assessment____  Sharps /Microtome Blades Rotating Objects Hot plate	<b>Risks from Hazard</b>  Cuts Cuts Burns	<b>Control Measure including PPE</b> <b>Ref the Hierarchy of Controls</b>  <ol style="list-style-type: none"> <li>1. <b>Place knife guard over knife</b></li> <li>2. <b>Training and risks assessments</b></li> </ol>
<b>7. Emergency Procedures and Shut down</b> <u>Shut Down Procedures</u> <ul style="list-style-type: none"> <li>• Engage the microtome brake immediately</li> <li>• Place knife guard over Knife</li> </ul> <u>Emergency Procedures</u> <ul style="list-style-type: none"> <li>• Control bleeding by direct pressure to the site of bleeding</li> <li>• Clean the wound as well as possible</li> <li>• Apply a sterile or clean dressing</li> <li>• Seek medical aid</li> <li>• Notify your local First Aid Officer and your supervisor</li> <li>• Go to the Casualty Department of the nearest Public Hospital or to your own medical practitioner for assessment as soon as possible</li> <li>• Fill in the UNSW Accident/ Incident form and return it to your supervisor</li> </ul>		
<b>8. Legislative References</b> <b>AS 2243.1</b>		

**9. Definitions (optional)** SoMS, School of Medical Sciences