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# INSTRUMENT STANDARD OPERATING PROCEDURE MANUAL

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College of Medicine



SAFETY AND LABORATORY COOMMITTEE, C.O.M, K.F.U.

**Prepared by**

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<b>Revision Number</b>	<b>Approved by</b>		
<b>R0</b>	<b>Dean:</b>  <b>Department:</b>		

**Document History**

<b>Document Section</b>	<b>Details of Amendments</b>	<b>Date</b>	<b>Modified by (Initials)</b>
SOP	First Draft on SOP for the operation of <b>Fully Automatic Rotary Microtome RM 2255 (LEICA)</b>	<b>22.11.2020</b>	

## 1. OBJECTIVE

The document describes the operation of Fully Automatic Rotary Microtome RM 2255 (LEICA).

## 2. SCOPE

### Fully Automatic Rotary Microtome - RM 2255 (LEICA)

- ☐ Fully Automatic , power rotation microtome with a separate control panel for creating thin sections of Histology specimens embedded in paraffin wax of varying hardness for use in routine and research laboratories in the fields of Biology, Medicine and Industry.
- Section thickness setting range: 0.5-100  $\mu\text{m}$ .
- Trimming section thickness setting range: 1-600  $\mu\text{m}$ .
- Object feed: 28mm  $\pm$ 1mm., feed move via step motor.
- Vertical specimen stroke : 70 mm.
- Sectioning speed : 0 ; 0.5- 420 mm/s.
- Return speed : approx.. 120 -420 mm/s.
- Maximum specimen size (LxHxW) : 50x60x40 mm.

## 3. RESPONSIBILITIES

- ☐ It is the responsibility of designated personnel in the lab to train staff and students on this procedure and to ensure adherence to this procedure under supervision.
- ☐ It is the responsibility of designated personnel (staff or Student) to follow the instructions of this procedure under supervision.

## 4. REFERENCES

- ☐ Leica RM 2255 Rotary Microtome Instruction Manual.

## 5. DEFINITIONS

- ☐ Leica 819 Low Profile Disposable Microtome Blades for cutting 0.5-100  $\mu\text{m}$  thin Specimen sections. .
- ☐ Standard specimen clamp :50x55mm.

- ☐ Universal cassette clamp: All common brands of cassettes fit into the universal Cassette clamp (UCC), either horizontally or vertically.

## 6. SAFETY PRECAUTIONS

- ☐ Handle the knife carefully because of sharp edges.
- ☐ Always remove knife/blade before detaching the knife holder from The instrument.
  - Always put the knives back into the knife case when not in use.
  - Never place a knife anywhere with the cutting edge facing upwards and Never try to catch a falling knife.
- ☐ For cleaning and removal of paraffin, do not use xylene or cleaning Fluids containing alcohol (e.g. glass cleaner).

## 7. PROCEDURE FOR OPERATING The Automatic Rotary Microtome

### RM 2255 (LEICA) :

#### 7.1. Turning on the instrument:

- ☐ Turn on the main power supply with the main switch at the rear This is followed by a beep.
- ☐ The instrument initializes.

#### 7.2. Software Operation.

- The software version is displayed for approx. two seconds. Then the Display reads “00.00”
- After the microtome is switched on, the display fields and LEDs of all Activated functions are lit up on the instruments control panel and display Field.

#### 7.3. Steps of the Procedure

- ☐ Insert a specimen block into the specimen clamp. Always clamp the specimen Block before clamping the knife.
- ☐ Carefully insert knife or disposable blade into the knife holder and clamp. ( Always clamp the specimen block before clamping the knife.)
- ☐ **Trimming in motorized operation:**
  - Use the **TRIM/SECT** key to select trim mode.
  - Set the desired trim section thickness.
  - Using the turn knob, set the appropriate cutting speed.
  - Using the **CUT MODE** button, select the **CONT** operating mode.
  - Start motorized sectioning and trim the sample.

- Terminate trimming when the desired sectioning surface and depth

□ **Sectioning :**

- Use the **TRIM/SECT** key to select cutting mode.
- Adjust the appropriate sectioning thickness.
- Using the turn knob, set the appropriate cutting speed.  
( Always set the cutting speed according to the hardness of the specimen !  
For hard specimens, always select a slow speed)
- Using the **CUT MODE** button, select the **CONT, SINGLE or STEP** operating cutting modes.
- Start motorized sectioning of the sample.
- Pick up the sections and mount them on microscope slides..

#### 7.4. Turning off the Instrument

- Stop the motorised sectioning.
- Turn off the electric main power source.

